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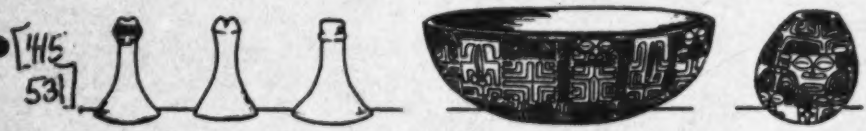
to my native informant, of rungs lashed on poles with sennit. On Nuku Hiva I was told that the posts supporting the *fata'a* were carved and also those of the sleeping house in the establishment of a chief who could afford such elaboration, and that the floor was made of small fau logs, a long notched log serving as a ladder. The oven and cooking fire were on the ground underneath the *fata'a*. It was on the *fata'a* that men devoted themselves to their home industries—the crafts of ornament and weapon-making, the shaping of bowls, the making of *popoi* pounders, and to the carving of these.

The Cook House

The cook house *(fa'e tumau)* was a shed on the ground, thatched with coconut leaf mats, open on all sides or closed on two or three sides, with bamboo or fau rods placed sometimes horizontally, sometimes vertically. The oven was a hole in the earth floor. In it lay the small stream boulders



a *b* *c*

Figure 9.—Household utensils: *a*, types of stone *popoi* pounders; *b* and *c*, carved bowls showing typical designs.

that were heated for cooking. Fire was made by friction by the plough method: a short stick of soft wood, usually fau, sharpened at the lower end, was rubbed rapidly in a groove running lengthwise on the surface of a larger piece of soft wood (fau or the dry stem of a coconut cluster preferred), wood dust accumulating gradually in a little pile at the end of the groove away from the operator, until a fine thread of smoke began to rise from this heated pile of dust and then the point of the rubbing stick was thrust quickly into the dust, tinder added, and the glowing bit of dust and tinder were blown into a flame. The burden of making fire every time it was needed was obviated by means of *nanu ahi*, long bundles of coconut sheafs tied with sennit, which when lighted smouldered for a long time. Tongs *(koke mei)* for handling the hot stones in the oven were made of two sticks three or four feet long, preferably of *mi'o* wood. These were held together about a foot from the lower end by means of a loose lashing, which allowed sufficient play for the sticks to be crossed and manipulated as tongs.

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There was always a large, thick, and slightly hollowed, board *(hoana)* on which the breadfruit was pounded. The pounding was done with stone pounders *(ke'a tuki popoi)* of the form shown in the accompanying sketch (fig. 9, *a*). Mr. Linton distinguishes four types of pounders: salt pounders, children's pounders, those used for the breadfruit paste, and

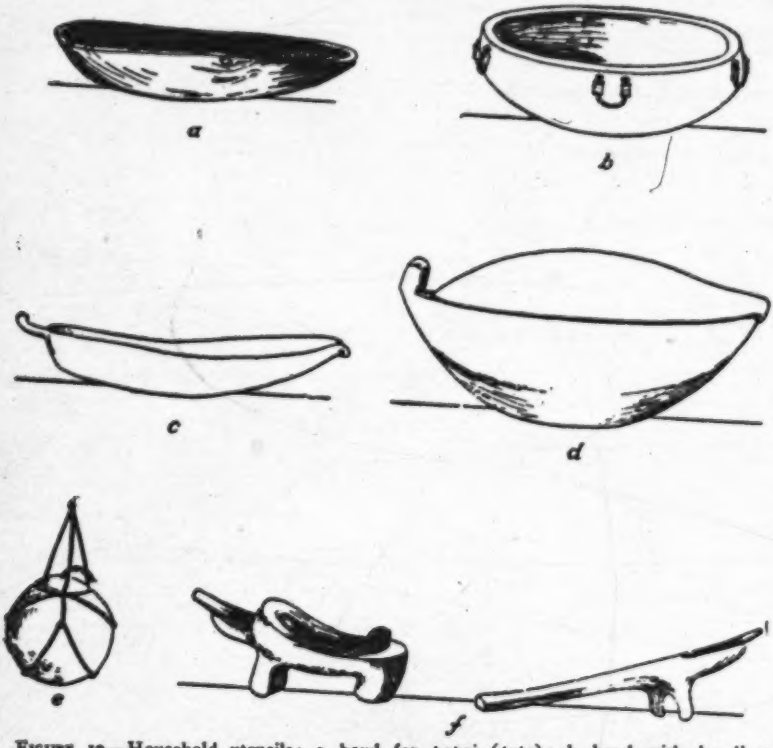

FIGURE 10.—Household utensils: *a*, bowl for *popoi* (*toto*); *b*, bowl with *handles*; *c*, kava bowl (elongated scoop form); *d*, kava bowl (bird form); *e*, gourd container (*hue*) in a net; *f*, types of coconut graters (*feka*).

those for infants' food. A full account of these and of the different types of bowls and containers used by the natives will be found in Mr. Linton's study of the material culture. The smaller vessels were made of coconut shell; the larger ones, of wood, fau, breadfruit, casuarina, *temanu*, and *mi'o*, the last named being the best and most commonly used. A large stone bowl *(ipu ke'a)* was seen at Pua Ma'u, but stone was not commonly

1: Handy E-5 (1920-1921)1923 OX6 Marquesas OX6

used for bowls or mortars. Wood and coconut shell vessels were carved with the types of design shown in the accompanying sketches (fig. 9, *b* and *c*.) Drinking cups for water and kava were of coconut shell. Small food bowls were called generically *ipu* or *kipu*, different sizes and forms having many specific names. Large quantities of *popoi* for feasts were put in very large round bowls (*toto*) (fig. 10, *a*) of *temanu* wood, some of them four feet in diameter, or in long, canoe-shaped troughs. Between the very large bowls and the small ones, there ranged all sizes. Knoblike handles, carved from human bone or made of a large smooth nut, were attached to the sides of the bowls with sennit cords passed through holes in the bowl (fig. 10, *b*). For kava there were two types of containers (*tahaha, tanoa,* or *kotue)* used, one like an elongated scoop with a pointed end from which the *kava* was poured (fig. 10, *c*), the other roughly copying the form of a bird and having a lid. (See fig. 10, *d*.) Small containers (*hue*) with covers *(tifa)* were made of large coconut shells and gourds *(hue mao'i)* and suspended on the beams of the house by means of small nets woven around the body of the vessel (fig. 10, *e*). Water was kept in large gourds *(hue)* or large bamboos *(kohe),* the joints of which, with the exception of the one at the bottom, had been rammed through on the inside. Graters for coconut *(feke)* were made by lashing to a stick supported on legs, a piece of pearl shell, one edge of which was chipped or filed into small saw-teeth (fig. 10, *f*). Another type of grater (*iku*), made of the tail of the ray fish, was used for grating amomum root *(ena)*. According to Mr. Linton, sharks' fins were also used for graters. Strips of bamboo, sharks' teeth, and shells were used for knives *(kohe)*. Besides these implements and utensils used in connection with cooking and eating, small nets, fishing rods, and the like were hung under the roof and on the beams and posts of the cook house. A pointed stick *(ko)*, set in the ground, served to husk coconuts.

The Sacred Place

The family sacred place was either a small *tapu* enclosure or a small, high platform (the *taha tupapa'u)* in which or on which temporary houses and shrines or altars were erected in connection with birth and death ceremonial. These were always in close proximity to the sleeping house, and hence were an integral part of the establishment. On Hiva Oa, there was a shed on a small but high, stone platform *(taha tupapa'u)*, but on Nuku Hiva the enclosed place with a temporary shed appears to have been common. At times of ritual, such as the treatment of a dead body, or the erection of the temporary altars in honor of children, these temporary sheds were decorated with cloth as a sign of *tapu*. Images were

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upon the birth of a son, the child thereafter becoming the central figure of the story.

It may be well before entering upon detailed description to summarize the most important of the numerous ways in which a father honored and provided for the future of his first-born son or daughter. The birth of a first child of a chief was announced by the blowing of the conch-shell trumpet *(putona)* by the mother's maternal uncle (mother's brother?). This uncle also went down to the sea to obtain from the holes in the rocks sea water in which to bathe the child, the water being carried back in a conch-shell. For the boy child the first rite of consequence was the erection, at his birth, of a decorated shrine and the chanting of a spell intended to strengthen his spirit. Then, there was another rite—that of bathing the child in fresh water brought from the mountains, the object of the ceremony, one would suppose, being purification. Soon after the child's birth its father planted trees to furnish it with food and cloth and some time later a new house was built in its honor, a feast being given at the time of the consecration of the new dwelling. The making of cloth, ornaments, a sacred adz, a canoe, and other things, for the first-born are recounted in the sacred chants recited upon these occasions. At some time during his childhood, the first-born male child participated in a great funerary memorial festival in which offerings of pigs were made to his ancestors' spirits in the other world. Sometimes before birth, sometimes after, the child was formally betrothed with elaborate rites; and there was a rite which constituted the presentation of the child at its first public appearance at a festival *(hakahe'e)*. At the proper times the father employed a professional bard *(tuhuna o'ono)* to instruct the boy in the sacred chants, in genealogy, and in legends. Shortly before maturity the boy's foreskin was incised, and when the youth was old enough to stand the pain, the elaborate and costly undertaking of furnishing him with a suit of tattooing was undertaken. This was followed by festivals to exhibit the tattooing, and another festival in honor of the youth, at which songs composed in his honor were sung in order to elevate him in the esteem and admiration of his tribe. Lastly there was his marriage rite. Soon after this he usually had a first-born of his own, in whose honor he would, in his turn, begin again the cycle of rites that had just been performed for him. Frequently a son would honor his father with a feast. Upon the death of his father, the son attended the proper funerary rites, and afterwards, with the rest of his family, participated in making the proper offerings at memorial feasts designed to elevate the spirit in the next world. Such was the history of the first-born son in every family of any consequence.

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The harvesting of breadfruit at the time of the main crops, of which there were four in each productive year—that is when there was rainfall—was a communal enterprise undertaken at different times in different parts of the group. When the chief saw that the breadfruit were ready for harvesting, he would summon his workers with a blast of his conch shell, or would send an executive *tuhuna* to get adequate assistance. The first, or

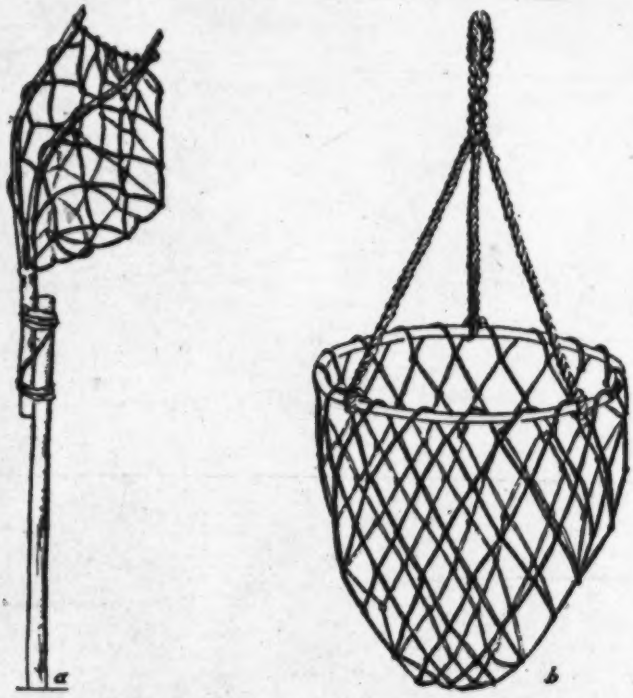

FIGURE 19.—Breadfruit nets: *a*, hand net for breadfruit (*paiko*); *b*, large net for breadfruit (*ko'oka*).

preliminary crop of breadfruit, which always preceded by only a short interval the more abundant main crop, belonged entirely to the chief, and served to fill his private breadfruit paste (*ma*) pits from which his household, guests, assistants, and workers were fed, and the great tribal reserve pits back in the valleys, which were filled in good times as a provision against famines. The second harvest was used to fill the private family pits.

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dishes here. The *ma*, almost like clay, is dug out of its hole, carried to the house in a bowl, and placed on the *hoaka* or long, wooden trough to be kneaded. If it is very old and hard, it must be softened with water. Indeed throughout the preparation of *popoi*, water as a lubricant is used so freely as to become an important ingredient. When it is kneaded into a soft dough, it is wrapped in small packages, enveloped in fau leaves and tied with the bark. Today these packages are boiled in water in kerosene cans or large iron pots, but it is the earth oven in which they were originally baked, that we should include in this description.

The average oven is a hole dug in the ground, about two feet deep, three feet wide, and four feet long. In the bottom of it is placed the firewood (*vehie*), and on top of this, stones deeply pitted, which do not burst with heat. Fire was made originally by rubbing a small stick along a groove in a larger stick. (See description under The Dwelling, The Cook House.) In this oven (*umu*) the stones are heated thoroughly, part of them then removed with a *kipo* (which is a kind of long-handled dipper made with a stick passed through a coconut shell), or with the *koke mei* (tongs of two sticks bound together with fau bark which, as its name indicates, is primarily designed to lift roasted *mei* from the fire.) A thin layer of earth is spread over the remaining stones, their heat tested by the bare foot of the cook; the packages of *ma* are put in on a criss-cross of green guava sticks or petioles of fau leaves, to keep them from burning; the remaining stones are heaped about the packages, and the whole is covered with fresh *mi'o* leaves and then overlaid with earth.

Ma is tested like cake, by thrusting a small stick into a package to see if the dough still adheres to the stick. When it does not, the *ma* is cooked. The packages (*koumu*, Hiva Oa, *vahima*, Nuku Hiva—8) are taken out of the oven and unwrapped; the *mā* is placed on the kneading trough and pounded into a smooth paste with the stone *popoi* pounder (*kea tuki popoi*). It is pounded when hot preferably, since fermentation follows quickly when it is pounded cold and the *ma* does not keep so well. After pounding, it is again wrapped in leaf packages and kept until needed. In time it collects maggots and must be washed in salt water before being eaten, but it keep this way for some time.

It is this *popoi ma* which is mixed with the fresh breadfruit to make *popoi mei*. The fresh breadfruit has been ripened with a green guava stick and is now roasted on a wood fire. The blackened and charred skin is peeled off, the core removed, and the flesh mixed with water and pounded on the board until quite soft. Then a hole is scooped in the middle of the white *mei*, the brown *ma* is taken from its package and put into it, the two are kneaded together, with the constant addition of water to make

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sea to fish, and were consequently driven to eating rats. Some say they braised the rats, others say they mashed them in the small round holes to be seen today in the stones of house platforms, and ate them raw with *popoi*. Today meat of various kinds is cut in strips, salted, washed, and dried in the sun; but it is doubtful if it was so conserved in former days.

If there is no *inai* to go with the *popoi*, a ripe banana or a piece of coconut will suffice. Formerly the eggs of the *tara* (small birds which live on the rocks by the sea) were broken into a length of large bamboo, which was sealed with a leaf tied over the open end. When baked, this dish also served as a substitute for meat and fish.

VEGETABLE, FRUIT, AND NUT DISHES

When breadfruit is gone and the sour *ma* is growing scarce, the natives begin to utilize other native products. A variety of dishes are made. Among these are *feikai puauhi* made of raw wild yams peeled and cut up into the coconut-leaf baskets and baked in the oven with coconut milk in the fashion of the *mei feikai; feikai huetu* (a kind of wild banana called *fei* in Tahiti) made of raw, very ripe *huetu* and coconut milk, cooked in the same way; *feikai ta'o* made sometimes with the large *kape ta'o* (*Colocasia esculenta*); *feikai kuma'a* (sweet potato); *feikai hue arahi* (pumpkin); and *feikai meika* (banana). All the fruits must be half-cooked before the *feikai* is made.

Taro forms the basis for a native dish called *poke*. The taro is first peeled and grated (formerly on coral). This is a difficult task, since contact with the raw taro makes the hands itch, so that they must be held now and then over the fire to relieve them, and never, during the process, be put into water. The gratings are wrapped in fau leaves, and baked in the oven. Meanwhile, coconut flesh has been grated, mixed with pounded *ti* leaves to aid in extracting the oil and the whole squeezed from a strainer into a bowl. Hot stones are dropped into the bowl of liquid, which is stirred constantly for about half an hour, until the oil forms and the sauce, which is called *koneko* (8), thickens. When the taro is taken out of the oven, it is pounded with a stone, mixed with the sauce, and eaten hot. *Poke ta'o* can also be made with ripe breadfruit, when such is to be had. The grated taro is kneaded with the flesh of ripened breadfruit on the food board, after which the dough is wrapped in taro leaves, with an outer covering of banana leaves, and left for two days in the ordinary oven. It is eaten with oil of coconut as is the pure *ta'o poke*. Today taro is also baked in its skin in an oven in the same way that sweet potatoes are cooked.

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252 age of *ma; tipo*, to put *ma* in packages to cook it; *tohi i te ma*, to get *ma* from the silo, cutting and ladling it with the hands; *toueva*, small package of leaves to cover what is cooked in the earth oven; *tuoo*, to put coconut milk on *popoi*.

KAVA-DRINKING

272 The drinking of *kava* was common in the Marquesas as in other parts of Polynesia. The drink was made from the root of a species of pepper plant (*Piper methysticum*), which was chewed in preparation. It appears that in different parts of the group there was some variation in the practice of chewing the *kava* root to make the drink. Melville (23, p. 194) describes young boys as chewing the root; Porter (24, p. 95) says, "Persons of lower class chewed it"; an old white resident of Taiohae said that young girls always did this there; while on Hiva Oa, my trustworthy informants all agree that *kava*, being *tapu* in ancient times to women and children, was always chewed by men.

On Hiva Oa, the mouthfuls of masticated *kava* root were dropped into a bowl (*kotue*) by the men who were doing the chewing. Water was added, the mass was stirred, and then allowed to stand a short time. The [415] liquid was strained by means of a bundle of crushed reed stems (*mouku*) or a piece of the fibrous sheath that grows at the base of the coconut leaf (*kaka a ehi*), the strainer being dipped in the liquid, passed around, so as to take up the particles of fiber, taken out, and then wrung out by twisting with both hands. Carved coconut-shell drinking cups (*ipu*) were dipped [415] into the bowl and passed around the company.

Melville (23, pp. 194-5) gives the following description of the making of *kava* in Tai-pi:

> Some half-dozen young boys seated themselves in a circle around an empty wooden vessel, each one of them being supplied with a certain quantity of the roots of the "arva," broken into small bits and laid by his side. A cocoa-nut goblet of water was passed around the juvenile company, who, rinsing their mouths with its contents, proceeded to the business before them. This merely consisted in thoroughly masticating the "arva," and throwing it mouthful after mouthful into the receptacle provided. When a sufficient quantity had been thus obtained water was poured upon the mass, and, being stirred about with the forefinger of the right hand, the preparation was soon in readiness for use.

Modern informants say that *kava* was drunk only by old men. Younger men, and particularly warriors, seldom drank it, because it made them weak [266] in the knees. These informants say, however, that *kava* was always drunk as an accompaniment to the eating of human flesh, and on these occasions the warriors always participated. It was usual to take a copious draft of the drink and then quickly to eat a bit of food. The narcotic effect would immediately follow with most men, but some would have to take a number

1: Handy E-5 (1920-1921)1923 OX6 Marquesas OX6

796 266 seems that the human flesh was eaten sometimes at the feast place, while at other times each man took home his own share, or that some was eaten and some taken home. When human flesh was taken home, the men had to eat it in the sacred storehouse (*fata'a*). Regardless of where or how the victim was eaten, the head was always sent to the sacred place (*me'ae*) for the god. It was not common for the intestines to be eaten, although in Atu Ona Valley there was one tribe that ate them. This tribe was the one reputed to have eaten fellow tribesmen. Women never ate human flesh except that of a victim taken in revenge for the death of a particular fellow tribesman. In the eating of the flesh of such a revenge victim, all members of the tribe shared.

The manner of eating human victims on the feast place at Hiva Oa has been described to me as follows: The body was cut up raw, and the pieces were distributed. *Kava* was then mixed. When the drink was ready, a small piece of flesh was put on the end of a stick and held in the flames of a fire just long enough to heat the meat, although not long enough to cook it. The *kava* was then drunk and the flesh quickly eaten, with the result, it is said, that a man became immediately intoxicated. If there was enough of the flesh, some of it was taken home by the different men. At each eating the same routine was followed with the same results. [261] The flesh was kept and eaten until it was rotten.

A number of practices connected with cannibalism described in the manuscripts of the Catholic Fathers (4, 7, 9, 19) seem to belong with this description of the customs connected with the eating of human victims. [272] *Pī'au mitimiti* was applied to the drinking of juices of decomposed human victims. The eyes and heart were the portions allotted to the highest chief, while the ears were shared out among his servants. Hands and feet were cut off and eaten first by the rest of the feasters, being regarded as especially delectible. These manuscripts state that the abdomen was cut open and that the intestines and other organs were eaten, the intestines being eaten raw. The crushing of the skull of a child and the eating of its brains are described by one writer, along with other similar practices. Père Siméon (7) describes one occasion on which the brain only was eaten, the rest of the body being discarded, and another occasion on which victims were eaten raw when a hasty departure was taken through fear of the enemy.

796 266 415 I ascertained at Pua Ma'u that in that valley there was a special type of vessel, called the *hue po'o*, that was intended to hold human flesh while it was kept in the house. This vessel was of wood and had a cover with a handle on top, called *po'o*. Cut up into this handle, from the underside of the cover, was a hole in which a small piece of human flesh could be

1: Handy E-5 (1920-1921)1923 OX6 Marquesas OX6

inserted. The juices from the flesh that dripped down into the bowl were mixed with taro leaves and eaten. It is said that sometimes a piece of meat would be kept in the hole for several months. This seems impossible unless the flesh were dried, but I have never heard of the drying. One of the chief purposes of this peculiar utensil was to serve as a protection against theft: a man coming to steal the meat would lift up the cover, look in the bowl and find it empty. The *hue po'o* was sometimes carried hung from the neck. This method of carrying it was explained as being due to the necessity of keeping off the flies with both hands.

TATTOOING FESTIVALS

At Atu Ona when the tattooing of a boy was completed and he was healed, his father announced that he would give a *ko'ina tuhi tiki* on a certain day. The lad in whose honor the feast was given was called *opou*. On the given day all the people gathered at the feast place. The chants called *pu'e* and *nato* were chanted (See Sacred Chants), two large drums (*pahu anana*) and three small ones (*tutu*) accompanying them. At this feast, all of the *ka'ioi* (see Tattooing) who had been decorated gratis in the tattooing house of the boy (*opou*) for whom the fête was given also showed off their new designs.

Another informant, at Pua Ma'u said that three fêtes were given in honor of a boy after his tattooing had been completed: the first, the *ko'ina tuhi tiki;* the second, the *ko'ina pou fau* (*pou,* post; *fau, Hibiscus tiliaceus*); and the last, the *ko'ina toe haka.* Brief descriptions of the first and third of these are given below; but concerning the second nothing is known.

According to this Pua Ma'u informant, who had himself been a *ka'ioi* in the tattooing rites, the boy for whom the tattooing had been undertaken and for whom the feast was given never danced. At his first fête, the *ko'ina tuhi tiki,* the boy showed off his new tattooing by marching around the dance place accompanied by the *ka'ioi* who had been tattooed with him. He was anointed with coconut oil, saffron, and sweet-scented juices (*huhe*). This made his skin light yellow and brilliant, causing the designs to show to great advantage. The youth wore only a tortoise-shell headdress and a loin cloth. The type of chant called *putu* was intoned in honor of the youth who had been tattooed (see Chants), being accompanied by the hand-clapping of the *ka-ioi* standing on the dance area, while two men and two women danced. Neither the *ka'ioi* nor the youth for whom the feast was given danced. At this festival the chants called *uta* and *pu'e* were also sung. (See Chants.) In Pua Ma'u valley, I was told that the *ko'ina tuhi ti'i,* or *ko'ina pati'i* (*pati'i,* nick-

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PLATE IV.—TATOO DESIGNS IN THE MARQUESAS: A LEG DESIGN.

PLATE V.—THE STORAGE OF BREADFRUIT IN SILOS.

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A. Basket for draining breadfruit.
B. *Ma* pit lined with banana leaves.
C. *Ma* pit, showing the stored *ma*, and the banana leaves projecting beyond the mouth of the hole.
D. *Ma* pit, showing tiers of *ti* leaves laid horizontally.

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PLATE VI.—THE STORAGE OF BREADFRUIT (*continued*) AND THE PREPARATION OF FEIKAI MEI PA'A.

A. *Ma* pit, showing covering of *ti*-leaf mats.
B. *Ma* pit, showing banana leaf covering.
C. Breadfruit for making *fei kai mei pa'a*, laid in a fern-lined trough of bark.
D. The trough closed like a tube for ripening the fruit.

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PLATE VII.—THE PREPARATION OF FEIKAI MEI PA'A (*continued*).

A. The ingredients placed in a leaf-lined hole in the ground.
B. The leaves tied to form a bag.
C. The bags containing the ingredients, tied in pairs and hung over a pole.
D. The bag-laden poles placed across the oven.

PLATE VIII.—THE PREPARATION OF FEIKAI MEI PA'A (*continued*).

A. Small fau poles laid across the logs supporting the bags.
B. A layer of coconut palm leaves on the fau poles.
C. A layer of bark covering the coconut leaves.
D. The whole oven covered with earth and embers.

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1: Handy E-5 (1920-1921)1923 OX6 Marquesas OX6

A

B

C

D

THE STORAGE OF BREADFRUIT IN SILOS
Photographs by Ralph Linton

[End Plate 5]

4: Fernandez de Quiros T-5 (1595)1904
OX6 Marquesas OX6

two others. His eyes were fixed on the ship, and his countenance was like that of an angel, with an aspect and spirit that promised much, of a good colour, not fair but white; his locks like that of a lady who valued them much. He was all that has been said, so that I never in my life felt such pain as when I thought that so fair a creature should be left to go to perdition.[1]

The natives came with much speed and fury, rowing their canoes, pointing with their fingers to their port and land, speaking loudly, and often using the words *atalut* and *analut*. They came to our ships, and when they arrived they gave us cocoa-nuts, a kind of food rolled up in leaves, good plantains, and large canes[2] full of water. They looked at the ships, the people, and the women who had come out on the galley to see them, at whom they looked, and laughed at the sight. They got one to put his hand on the ship, and, with coaxing, they got him to come on board. The Adelantado dressed him in a shirt and put a hat upon his head, which, when the others saw, they laughed and looked, crying out to the rest. On this about forty came on board, beside whom the Spaniards seemed of small stature. Among them there was one taller than the rest by a head and shoulders, and taller than our best men, though we had one very tall. They began to walk about the ship with great boldness, taking hold of whatever was near them, and many of them tried the arms of the soldiers, touched them in several parts with their fingers, looked at their beards and faces, with other monkey tricks. As they saw that our men were dressed in various colours, they were confused; so the soldiers bared their breasts, let down their stockings, and tucked up their sleeves to satisfy them. When they were shown this, they quieted down, and were much pleased.

[1] Suarez de Figueroa quotes all this word for word, and here says that he is quoting from the papers of the Chief Pilot.

[2] Joints of bamboos in which they carry water.

5: Porter T-5 (1812-1814)1823
OX6 Marquesas OX6

The men and women are both remarkably fond of pork, and from their desire to eat it one would suppose that it was an article of great rarity and scarcity among them, as in fact it is. For although the island abounds in hogs, the natives seldom kill them for the use of their families, but keep them for their feasts; and, on such occasions, they will frequently kill five or six hundred at a time. If a relation die, they have a feast on the occasion; and they will save their hogs for years, in order to make their feast abundant, in which consists its chief splendour.

When a marriage takes place, they also have a feast, and in this consists the whole ceremony. The union is not binding, and the parties are at liberty to separate when they no longer like each other, provided they have had no children. The girls are seldom married before they are nineteen or twenty years of age, and their licentious life prevents them from having children before that period; they therefore preserve their beauty to an advanced age. Before marriage they are at liberty to indulge themselves with whom they please, but after marriage the right of disposing of them remains with the husband. The women, different from those of almost every other Indian nation, are not subjected to any laborious work. Their occupations are wholly domestic; to them belongs the manufacturing of cloth, also the care of the house and children. The men cultivate the ground, catch fish, build canoes and houses, and protect their families; they are all artificers, and as they have but few wants, they are perfect in the knowledge necessary to supply them. To be sure there are certain professional trades, which they are not all so perfect in, such as tattooing, and the manufacturing of ornaments for the ears; for those objects there are men who devote their whole attention to render themselves perfect. There are also professed barbers, and their doctors are, in some measure, professional men. Their furniture consists of mats of a superior workmanship, calabashes, baskets, kava cups, formed of the cocoa-nut, and cradles for their children, hollowed out of a log, and made with great neatness, some small chests, also hollowed out of a solid piece, with covers to them, wooden bowls, and stands, calculated to hang different objects on, so contrived that the rats cannot get on them. Their plumes and other articles of value, which would otherwise be injured by the rats, are suspended in baskets from the roofs of their houses, by lines passing through the bottom of an inverted calabash, to prevent those animals from descending them. Agricultural implements consist only of sharp stakes for digging the ground; those for fishing consist of the net, bone and wooden harpoons, the rod and line, and fish-hooks formed of mother-of-pearl, of which, as well as of the bone and wooden harpoons, particular descriptions may be necessary.

They shave their heads, or rather their barbers shave them,

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

By far the most elaborate pipe seen was in the possession of Mr. Frank Varney of Atu Ona, Hiva Oa. It is shaped like the bowl and fore-stem of an ordinary straight brier pipe, but has a tiki figure carved against the curve of the bowl in three-quarter round. (See Pl. XLIX, *D*.) The convention of this little figure is curious; the eyes are indicated by raised circles on either side of the head, and there is no distinct mouth or nose. A small beak-like projection at the bottom of the head, between the eyes, suggests that it may represent a bird. A hole has been drilled between the figure and the pipe bowl at about the level of the waist. This pipe is known to be very old and has been in the possession of a single family in Atu Ona for at least three generations.

276 532

BOWLS AND TRAYS

Stone bowls and trays are rare in the Marquesas, and the few specimens extant vary greatly in form and finish. The larger objects of this sort are usually quite crude. Some of the smaller bowls, on the other hand, show great skill in manufacture and are well finished and even decorated.

415 [324]

The largest object of this sort seen was a so-called tray which was built into the upper edge of a small platform in the *tohua* of Hutuhu'u, valley of Taipi-Vai, Nuku Hiva. It appeared to be a large fragment of a lava bubble which had been smoothed and slightly excavated on the inner surface, the outside being left rough. It was 3 feet, 6 inches long, with an average width of 2 feet, and an external depth of from 6 to 9 inches. Its form was likened by the natives to that of a canoe, a small natural projection at one end being pointed out as the prow, but the depression was really roughly rectangular. It is said that the bodies of victims who were to be eaten were laid upon this tray, but no other data could be obtained.

Another large bowl or tray of an altogether different form and use, was seen in the island of Tahu Ata. It apparently had been made from an oval water-worn bowlder, the outer surface left unworked. It was seen in the course of a visit so brief that exact measurements were impossible but the dimensions were approximately as follows: length 2 feet, 6 inches, width 20 inches, external depth 18 inches. The depression was circular, narrowing toward the bottom, and was about 14 inches in diameter and one foot deep. The rim was flat and rather carefully smoothed. Upon one end of the rim there was a cylindrical projection about 3 inches in diameter, and of the same height, which was said to be the base of a small tiki figure about one foot in height which was carved in one piece with the bowl. This little figure had been broken off and carried away many years ago. The bowl was built into the pavement of a large dwelling *paepae*, but informants were not certain that this was its original position. It

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

415 [396] was so heavy, however, that several men would have been required to move it and it must have been fixed in some special place. It was said to have been used to dye tapa with saffron.

A third stone bowl was seen in the valley of Pua Ma'u, Hiva Oa, and is known to have been the property of the last queen of that valley. It was made of red tuffa of the sort ordinarily employed for large stone slabs, and was very roughly finished. The dimensions were as follows: diameter, 18 inches; external depth, 14 inches; thickness of rim, 3 inches. It was said by the owner to have been used to keep fire in, in the house at night, but this seems to have been an unusual practise and no other bowls of the sort were known to the natives.

A peculiar stone tray was collected in the valley of Taipi Vai, Nuku Hiva. This specimen is made of rather coarse lava, worked all over but poorly finished. The outside is decidedly asymmetrical—somewhat oblong in shape with rounded ends. One end of the tray has a curious flat projection running from a short distance below the rim down the outside of the bowl to the bottom. This projection is 5½ inches long, 3⅛ inches wide at the upper end and 2 inches wide at the lower end, at the top it is 1 inch thick, at the bottom ½ an inch. The upper end and sides of the projection are somewhat undercut, and a shallow transverse groove runs across the lower end ¼ of an inch above its tip. The internal depression of the tray is nearly rectangular, 11 inches long, 7¼ inches wide and ¼ of an inch deep. The bottom is flat, the sides curving upward abruptly. The outer surfaces of the tray recurve slightly at the rim. The dimensions of the tray are: length, 14⅝ inches; width, 9¼ inches; maximum thickness, 4½ inches. This tray was used by its owner to grate saffron root and was described by him as an heirloom. There is good evidence, however, that he found it while clearing land only a short time before its purchase and its ancient use remains uncertain. (See Pl. 1, *B-C*.)

The specimens described have all been of large size and rather crude workmanship. Certain fragments in the collection of the Bishop Museum, however, prove that there were in the group small and finely made stone bowls. No. B3699A is a fragment of a bowl or tray, its size being too small to make exact determination possible. The material is some soft, rather close-grained, grey stone, and the whole surface, including the fracture, is heavily patinated. The walls are about ⅜ of an inch thick; and the internal depression ⅜ of an inch deep at the rim. The rim is flat, and the object appears to have been finely finished on all surfaces. Another fragment (No. B3699B) is of a small circular bowl about 6¾ inches in diameter and 2¾ inches deep. The walls are ⅜ of an inch thick at the rim and about 1¼ inches thick at the bottom. The outer sides recurve slightly at the rim, which is flat with rounded edges. This

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

bowl was made of some rather hard close grained stone and was finely finished inside and out. Still another specimen (B3699C) appears to be a fragmnet of a rather shallow bowl 8 to 10 inches in diameter. It is made of a soft grey stone, possibly an indurated ash. At the lower end of the curve it bears a chevron carved in high relief along whose center there is a single incised line. It seems probable that this formed part of a zigzag band running around the bowl, but the fragment is too narrow to tell certainly. No. B3699D is a fragment from the side of a rather large and heavy bowl or tray having a bottom thickness of about one inch. The outer surface was smoothly finished and decorated with closely spaced incised lines forming simple curvilinear designs. (See Pl. XLIX, *E*.)

POUNDERS

INTRODUCTION

Pounders were, with the possible exception of adzes, the commonest of Marquesan stone artifacts, and they still form a regular part of the domestic equipment of all native households. In ancient times they appear to have been manufactured to some extent in all the valleys but even in prehistoric days the superiority of the stone found in Ua Pou and Ua Huka had led to a localization of the industry. The finished implements were traded from these islands to the rest of the group. The manufacture of *popoi* pounders has continued in Ua Huka down to the present time, and shortly before the war large numbers are said to have been made for a German trading company which sold them in their stores throughout the group and even in Tahiti.

At the present time the making of *popoi* pounders appears to be essentially a spare time industry, the natives working upon them when they have nothing more pressing to do.

For the pounders three varieties of stone were formerly used, all of which appear to have been rather soft, even grained magmatic rocks. The best grade was called *ovao*, a grey rock, fine grained, strong and light. The second best was called *puhiti'a*, and the third best *patuko*. All these varieties are said to have been obtained from the high part of the island lying to the east of the valley of Hokatu, but as bowlders in two other valleys were pointed out as good pounder stone, it is probable that the deposits were rather wide spread. The stone does not appear to have been regularly quarried, but was obtained from rock slides and stream beds.

The only tool used in making modern *popoi* pounders is an ordinary steel axe, and even the finishing touches are given with this unwieldy instrument. The process of manufacture is as follows:

An irregular piece of stone about three times the size of the finished implement is roughed out with heavy blows of the axe until it becomes a cone. (See Pl. LI, *A*, 1.) This cone is then worked down by light blows on all sides until the general form of the finished implement is produced. This is then smoothed by light, even blows with the corner of the axe until all the contours are perfect. The neck and body of the implement are then shaved with the edge of the axe until the scratches left by the last process are obliterated. The head

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

415 252 The *popoi* trough is usually made from breadfruit wood. An average specimen is 5 feet long and 16 inches wide, with square ends, straight sides, and a rounded lower and slightly excavated upper surface. In new specimens the depth of the hollow rarely exceeds 1½ inches but in old specimens it may be as much as 3 inches deep in the center, due to wear. In one very old *popoi* trough, evidently made with stone tools, the interior had been hollowed with fire. The dimensions of individual *popoi* troughs vary considerably, but those used in Nuku Hiva are on the whole shorter and broader than those used in the southern islands.

IMPLEMENTS FOR PREPARING COCONUTS

412 252 Coconuts rank next to breadfruit in the Marquesan dietary, but they seem to have been somewhat less important in pre-European times. They are gathered by hand, without special appliances. The first step in their preparation is to remove the thick husk. This is done by means of a pointed stake, about two inches in diameter, which is fixed rigidly in the ground, point up. To husk the nut it is grasped in both hands, struck sharply upon the point of the stake, and twisted away from it, removing a sliver of the husk, the process being repeated until only the inner shell remains. The process appears easy, but it calls for a considerable skill in manipulation. Nuts are usually husked where gathered, to avoid carrying unnecessary weight.

Nuts other than the thinnest shelled drinking nuts are opened by a few sharp blows of a stone given along the line of greatest diameter, an expert being able to break a nut into two almost equal halves in this way. The water in the cavity of old nuts is thrown away, and the flesh itself, rarely eaten, is grated to extract the milk. Coconut graters vary considerably in the details of form, but are all made upon a single principle.

The graters consist of a stool, or seat of some sort, from one end of which an arm projects more or less horizontally. At the end of the arm the actual scraper is fastened. In ancient times this consisted of a piece of rough coral, or of a strip of shell with the upper edge cut into teeth. Much care is expended upon the seat portion of some of these scrapers, which appears the more remarkable as the furniture of a Marquesan home rarely includes stools or other raised seats. To use the scraper the workman places himself astride the seat, and rubs the nut rapidly over the end of the arm, with a downward and outward motion. A bowl placed below catches the fragments of meat as they fall. When a sufficient quantity of the grated meat has collected, water is added and the whole mixed to a paste.

A strainer is then brought into play to separate the milk from the meat.

This strainer is nothing more than a thick bundle of fiber, about one foot in length and two to three inches in diameter, which is spread out and drawn across the bowl toward the workman, gathering up part of the paste. The ends of the strainer are then twisted in opposite directions, enclosing the paste, and the whole lifted from the bowl and wrung out, the liquid expressed falling back in the bowl. The dry meat remaining in the strainer is thrown away and the process repeated until only a thick creamy white fluid remains in the bowl. Two species of fiber are used for strainers, the commoner is that from the husk of the coconut. The finer strainers are made from the fibers of the stem of a long-leaves plant, which in leaf form and habit of growth resembles large garlic, and from a reference in Jardin (33) is probably *Cyperus mooreiensis*. No attempt is made to separate the fiber from the substance, the stems are simply split into long strips. (This fiber is also commonly employed for kava strainers, but there is a con-

[824]

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

CONTAINERS

The Marquesans use a great variety of containers which may be divided into two main classes: natural containers, such as bamboos, coconut shells and gourds, which need little preparation for use; and wooden containers, which require considerable skill in manufacture. The wooden containers are by far the more important in the Marquesas and are well represented in most museum collections.

NATURAL CONTAINERS

JOINTS OF BAMBOO

The Marquesans, like all peoples living in regions where the larger species of bamboo grow, used joints of bamboo to transport and store fluids. Small bottles, made from a single joint, do not appear to have been used, as their place was taken by more convenient utensils of gourd or coconut shell. Large bottles were made by cutting bamboo shoots three inches or more in diameter into sections from 10 to 20 feet long and piercing the septa between the joints, forming a pipe closed at one end. The piercing is now done with an iron rod heated red; the ancient method could not be ascertained. When in use the upper end of the tube was filled with a plug of green leaves. Bamboo bottles were purely utilitarian and were never decorated.

COCONUT SHELLS

The climate and soil of the Marquesas are ideally adapted for the growth of coconuts, the trees bearing profusely and producing nuts of remarkable size. It is not surprising, therefore, that the natives made an extensive use of coconut shells as containers and that they developed considerable skill in the manufacture and decoration of utensils of this kind.

The half shell of a coconut constituted a natural cup which could be used without preparation. The first improvements upon this original form appear to have been the smoothing of the edge by grinding and the removal, also by grinding, of the small external point which prevented the cup from standing upright. Cups and bowls made in this way are still occasionally used. The next step is to remove the tough inner skin and rub the outer surface smooth; rubbing-stones and burnishers are used for this work. As a final improvement the cups were either carved or ground thin. Carved cups were given a smooth finish and then decorated by the same methods and with the same designs as wooden containers. To make the thin, uncarved cups both the outer and inner surfaces were ground away until the walls were only slightly thicker than egg shell china. They were then thoroughly impregnated with oil, making them elastic and capable of withstanding quite heavy usage. When first finished, the surfaces of coconut

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

●415 cups were rather dull, but with handling they acquired a beautiful glossy polish. Many cups were provided with a cord handle by which they were hung up when not in use. This handle consisted of a loop of sennit passed through a hole a short distance below the rim, the inner end being kept from slipping back either by a knot or by a small disk of pearl shell, like a button. (See Pl. LVIII, *A*, 1.) The finer grade of cups were used principally in kava drinking, which gave the inner surface of the cup a coating of glossy yellow enamel, like lacquer.

It is difficult to draw any line between cups proper and bowls, as the two classes grade imperceptibly into each other. As a rule the bowls are larger and thicker walled, and most specimens have recurved rims, that is, they are made from more than half a nut. Most of these bowls are provided with handles by which they can be suspended horizontally. One specimen in the Bishop Museum has the handle cut in one piece with the body of the bowl (Pl. LVIII, *A*, 2), but as the bowl is evidently unused it seems doubtful whether this is an ancient form. The handles of old specimens are of cord and appear to conform to a single type. (See Pl. LVIII, *A*, 3.) They were made as follows:

A pair of holes were pierced through either side of the shell a short distance below the rim. A loop of sennit cord was passed through each pair of holes, the ends protruding on the outside. A large black seed was then threaded upon each end of the loop and pushed down against the outer surface of the utensil. A cylinder of human bone, carved with horizontal grooves, was next threaded on, followed by another seed. The two strands of cord were then brought together and passed through a short thick ornament cut from the shaft of a human humerous, carved into a tiki figure. Above this ornament both strands were threaded through a single black seed and closely wrapped with a strand of fine sennit, giving them the appearance of a single cord. The ends of the loops were either tied together above the center of the bowl or interwoven and enclosed in a continuous wrapping which concealed the point of juncture. Bowls arranged for suspension in this way were frequently provided with carved wooden covers like those used for gourds. Bowls were usually rougher in finish than cups and were rarely carved.

Coconut bottles were made from the whole nut, the kernel was removed by a simple but ingenious method. (See Pl. LVIII, *C*.)

[425] A large ripe nut was husked and the shell around the largest eye ground away to form an aperture about one inch in diameter. The nut was then placed in some stream where fresh water shrimps were plentiful and was left for a few days. The shrimps, entering through the aperture, picked the interior of the shell clean and left it ready for use. One of the smaller eyes was then pierced with a pointed stick and a loop of heavy cord passed through and secured on the inside, the outer end of the loop serving as a handle for the bottle. A wooden stopper for the large aperture completed the utensil, which appears never to have been decorated.

A slightly different type of bottle was used for the storage of scented oil for the hair (Pl. LVIII, *B*).

These utensils were made from small, thick shelled nuts having a more or less pointed stem end, which was ground off to below the eyes. The kernel was removed by the method just described. Most bottles of this sort were elaborately carved, some of the specimens ranking among the finest products of the native art.

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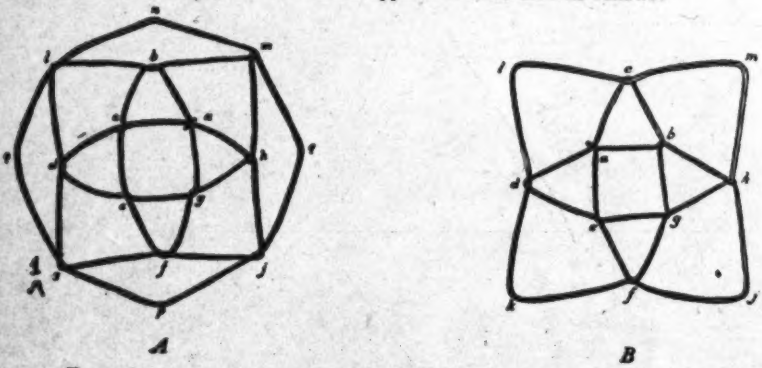
GOURDS

The Marquesans appear to have made a rather limited use of gourd containers. No gourd plants were seen growing, but from a comparison of the utensils collected with those in the Bishop Museum the species was probably *Lagenaria vulgaris*. According to informants, both necked bottles and neckless containers were formerly used, but all the specimens seen were neckless and were called by the natives *hue*. To make a *hue* the ripe gourd was plucked from the vine while still soft and the stem and adjacent shell cut away to form a round aperture three inches or more in diameter. The seeds and pulp were emptied out and the shell carefully dried in the shade. The interior was then scoured smooth with beach sand. Utensils of this sort appear never to have been decorated and ornamental shapes made by deforming the growing fruit had never been heard of by the informants questioned. All the *hue* seen were comparatively small, the largest being slightly under one foot in diameter, but the size of some of the wooden *hue* tops seen in burial caves would indicate that much larger utensils of this sort were formerly used. (See Pl. LVIII, *E*).

When in use the *hue* was supported and protected by a network of cords similar in principle to the Hawaiian *koko* (net), but rather inferior in design and execution. The manufacture of these nets has been discontinued and only two specimens were seen in the group, both in Pua Ma'u, Hiva Oa. Both were made of coconut fiber cord. Ordinary sennit of the sort used for house lashings was used for one specimen, and for the other, a flat five strand plait. The form of the nets may be seen from the accompanying sketches. For *hue* No. 1, on Plate LVIII, *E*, the process of manufacture appears to have been as follows:



A *B*

FIGURE 7.—Sketches of network of cords used to support gourd containers.

[97]

1/k [this should be k, in light of description on page 358—Analyst]

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

415 286 A large loop was first formed, one end of the cord being tied and left at *A*. (See fig. 7, *A*.) The loops *abc*, *cde*, and *efg* were then made in the order named. The direction was then reversed and the loops *ghijf*, *fkd*, and *dlb* formed. The direction was then again reversed and the loops *bmnl*, *lok*, *kpj*, and *jgm* made. From *m* the cord was carried to *h* and thence to *a*, where it was knotted in beside its other end. The points *n*, *o*, *p* and *q* projected above the top of the *hue* and served for suspension. The dimensions of the different meshes are: *a* to *c*, 4½ inches; *a* to *b*, 4¼ inches; *b* to *l*, 6¼ inches; *l* to *n*, 5 inches. The mesh, with the exception of the outermost loops, is drawn to scale. The knot employed is uniform except at the points *h* and *a*. It is a complicated wrap knot for which no name is known.

The net of *hue* No. 2 on the same plate, although superficially resembling that of *hue* No. 1, is made on an entirely different principle. (See fig. 7, *B*.)

The netting was not begun with a ring, the course of the cord being *a*, *b*, *c*, *a*, *d*, *e*, *f*, *g*, *h*, *j*, *f*, *k*, *d*, *l*, *c*, *l*, *h*, *b*, *g*, *e*, to *a*. Here the two ends are spliced together into a single cord of the size used throughout and tied about the line *cd*. A loop of cord was passed through the outermost meshes at *l*, *m*, *k* and *j*, to serve as a handle, its ends being tied together in a heavy knot. The mesh sizes are: *a* to *b*, 4¼ inches; *a* to *d*, 5 inches; *d* to *l*, 7½ inches. Two types of wrapped knots were used in different parts of the net.

[284]

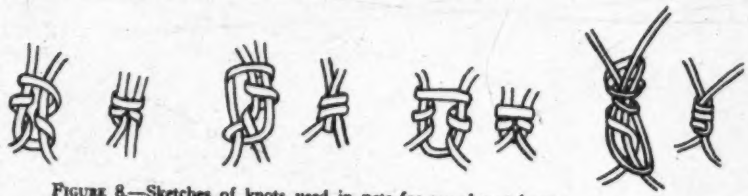


FIGURE 8.—Sketches of knots used in nets for gourd containers.

The widely divergent technique of the two specimens would seem to indicate a considerable variety for these objects in ancient times.

415 Gourd *hue* were normally provided with wooden covers, which were all made according to a fixed pattern. To one ignorant of its use such a cover would appear to be a small squat broad mouthed jar, with a rounded bottom, flatly convex to hemispherical body, a short neck whose sides sloped inward slightly toward the top, and a wide flat shoulder whose upper surface sloped inward and downward to the base of the neck. When used as a cover, the jar was inverted, the neck fitting into the orifice of the *hue*, the shoulder resting upon its top. The body of the cover rose above the *hue* as a small dome, and was frequently carved, [591] the decoration consisting of two tiki faces placed opposite each other. The space above and between these faces was filled with shallow parallel grooves running continuously from edge to edge. In spite of their form, *hue* tops appear never to have been used as separate containers, and they were probably hollowed only for the sake of lightness. (See Pl. LVIII, *F*.)

1 [this should read jqm, in light of illustration on page 357. [98] —Analyst]

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WOODEN CONTAINERS

The Marquesans made a great variety of wooden containers all of which may be placed in one or the other of two main groups: boxes, and bowls or dishes. The objects of each of these classes show considerable individual variation, and in the case of covered containers it is often difficult to say whether a given specimen is a bowl or a box.

BOXES

Wooden boxes, used for the storage of valuables, formed part of the equipment of every well-to-do Marquesan family. Such boxes were hewn from large pieces of wood by the processes described under bowl manufacture. (See p. 360.) The favorite materials were breadfruit, temanu and *mio*. The boxes varied greatly in size and in minor details of form and decoration, but all the specimens seen were clearly of a single type. They were made in two parts, a body and a lid. (See Pl. LIX, *A*.)

The body was oval in outline, with a more or less rounded bottom and considerably recurved sides; the upper edge was finished in a narrow flat rim which was broadened at either end. At one end of the body a large knob projected above the rim, while at the opposite end the body was either flattened or bore a short flat-ended horizontal projection. The lid was rounded on the outside, excavated inside, and bore along the inner edge of its rim a thin downward projecting flange which accurately fitted the orifice of the body. The end which rested against the knob of the body when the lid was in position was either flat or notched. The opposite end was elongated and provided on the under side with a short downward projection like a thick blunt hook, which rested against the outside of the body.

In one specimen, which differs in other details from the normal type, the rear end of the lid bears an upward projection corresponding to the knob of the body. (See Pl. LIX, *B*.) In well made boxes the lid fits the body so closely that it is frequently difficult to remove it. The whole utensil appears to be a more or less modified bird form, the body knob representing the head; the horizontal projection of the lid, the tail. (See Pl. LIX, *C*.) Boxes were frequently carved and the designs were usually the same as those used upon bowls. The first step apparently was to carve the body knob into a tiki face, and specimens in which this constitutes the sole decoration are not uncommon, although the more ornate examples are carved all over. In one crudely carved specimen in the Bishop Museum the designs show a preponderance of angular-geometric figures coupled with small line representations of human beings which are not of tiki type. (See Pl. LIX, *B*.)

BOWLS AND DISHES

Wooden bowls and dishes are probably more numerous in ethnological collections than any other objects of Marquesan manufacture, as the elaborate carvings with which many of them are decorated make them eagerly sought after by collectors. They still form part of the equipment of every native household

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

415 and are manufactured in considerable numbers. No lathes have ever been introduced into the Marquesas, and all wooden utensils are still made by aboriginal processes modified only by the introduction of metal tools. The modern makers have ceased to reproduce the more elaborate ancient forms and ordinary utensils are rarely carved at the present time; but skillful carvers are still found in Nuka Hiva and Hiva Oa, and especially in Fatu Hiva, which was formerly the artistic center of the group.

415 824 The Marquesans employed a great variety of woods for their utensils, the favorite being *mio* (*Thespesia populnea*). This tree has a dark brown heart wood and white sap wood, while its softness and even texture make it especially easy to carve. Next in importance came the temanu. This wood is light red to yellow in color and somewhat harder and less even grained than the *mio*, but still well adapted to the purpose. The trees attain a very large size, and on this account temanu appears always to have been used in ancient times for feast bowls and other large vessels. Most modern utensils are made of this wood, as the supply of large *mio* is practically exhausted. *Mei* (breadfruit) was used to a limited extent, but was considered an inferior material. Fau wood, when taken from old trees, was occasionally used, and small more or less ornamental vessels were made from sandal wood or *toa*. *Toa* was especially difficult to work on account of its hardness and its tendency to split, and objects made from it seem to have been primarily intended to show the skill of the workman. A number of other woods were sometimes used for special purposes or in the absence of better material, but according to informants, *vai*, a close grained red wood which appears well adapted to bowl making, was never used because it would split when exposed to the sun.

415 322 Modern bowl makers shape their utensils with adzes and knives, but knives are little used. The adzes are provided with iron blades made either from plane irons or from sections of iron pipe, which has replaced the stone blades of the *toki kouma* type. (See p. 323.)

A well equipped workman employs a whole series of adzes of diminishing size, the last used being miniatures only a few inches in length. Green wood is used when possible, as it is softer and easier to work, but seasoned wood can also be used for bowls after it has been soaked in the river for several weeks. A block considerably larger than the intended object is first roughed out from the log, and is then worked down with the adz until the desired outline has been obtained. In all the examples seen approximately the final form was given to the exterior before the excavation of the interior was begun. In making round bowls a pair of European compasses are now used to outline the rim, but the shaping of the body is done entirely by eye. In shaping the exterior a light glancing blow is used, the chips detached being of such uniform size that a well made bowl just prior to polishing is covered with a multitude of small regular facets like those on a bowl of beaten brass. In excavating the interior the workman begins at the center, and gradually works back to the edges, hollowing the whole interior to the depth of about an inch. He then begins at the center once more and excavates another level, continuing until the desired depth is reached. The inside of an unfinished bowl

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

thus consists of a series of steps, each marking one of the layers of excavation, and the removal of these steps is the last process prior to the polishing. The workman usually sits upon the ground, with the bowl held on edge in front of him and steadied with the left hand. In hollowing the interior a double stroke is used for each chip, the first blow being made horizontally, the second vertically. The bowl is slightly turned after each double stroke, and the excavation kept as nearly circular as possible. A knife is ordinarily used to trim the rim, being held with the blade below the hand, edge outward, and pushed away from the operator. Bowls are shaped as far as possible with the adz and knife, the final polishing serving only to obliterate the tool marks. Polishing is done with sand paper, the finest grade obtainable being used for the last stage, but in ancient times coral grinding stones were used. When the bowl has been rubbed smooth the surface is burnished with a china door knob, applied with as much pressure as possible. Old pebble polishers which have acquired a glassy finish are still occasionally used. The modern workman seems to be fully as skillful as his poorly equipped ancestor, and unless some enterprising European introduces lathes into the group it seems probable that the primitive processes of manufacture will survive unchanged for many years.

The Marquesans relied almost entirely upon carving for ornamental effect, and from conversations with modern bowl makers and carvers it would seem that the natives have little appreciation of the beauty of the wood used or the aesthetic value of pure form. This is borne out by the fact that some elaborately carved specimens are noticeably asymmetrical, when the fault could have been remedied without injury to the utensil. It is certain that many shapes of utensils were formerly used, but the long European contact has resulted in the disappearance of many of these origina' types and probably in the introduction of new types. The following list of native terms for various types of bowls and dishes has been compiled by Handy from Dordillon's Dictionary:

Ketipu. A large oblong dish (pig white in the middle and black at the extremities).
Ketihu. Dish.
Kopuha. Kind of native dish.
Kokomo. Cover of calabash, operculum of shell
Kokipo. Covered vase for popoi.
Kiopa. Native dish. Bowl.
Kipa. Vase to serve kava. Popoi bowl with cover.
Kapo. Vase for kava.
Kaipu. All vases.
Ipu. Bowl. All vases of small dimensions.
Hue. All vases with large openings.
Hue maoi. Calabash.
Tiponi. Dish.
Tihara, Tiharahara. Small dish.
Tiaha. Drinking vase.
Taeoa. Vase to prepare kava.
Tahaka. Small dish.
Tahoa. Oblong dish.
Tahaha. Large dish for popoi.
Puru hua. Small dish.
Pihara, Piarahara. Native dish.
Papa katua. Covered dish for popoi.
Haoo tapu. Large vase with cover to conserve popoi.
Akuipoi. A round wooden dish. An oval dish with a cover.

Many of these container forms could no longer be identified, and the following descriptions are based on specimens seen or described by reliable informants.

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415 Round wooden bowls (Pl. LIX, *F*) are still in use in all native households. The larger bowls are called *pora*, the smaller *ipo* or *tahake*.

In bowls of ordinary sizes the form is that of a segment of a sphere, but this is somewhat modified in the case of the large feast bowls, which are rarely over nine inches deep, although they may have a diameter of over four feet. Flat bottoms, meeting the sides at an angle, appear to be unknown. In most large and many small specimens the sides have a slight external recurve at the rim, and in practically all round bowls the greatest width of the interior is a short distance below the rim. The rims are flat and relatively wide, meeting the inner and outer surfaces of the body at sharp angles. In most bowls the rim is horizontal but in some the inner edge is considerably higher than the outer.

415 764 [824] At least two types of very deep circular bowls were used in ancient times. One of these, called *kipo*, was used on the island of Nuku Hiva for *kava*. It was about ten inches tall and eight inches in diameter, and is said to have been provided with a small flat base (Handy, personal correspondence). In Hiva Oa a large, very deep bowl of *toa* or *miio* wood was sometimes used in the burial caves as a container for the skull of a chief or beloved relative. The practice was rare, however, and the description is based upon a single specimen found some years ago in a burial place. The original bowl was not seen as its finder had used it as a container for his wife's skull, but according to natives who had handled it, it was elaborately carved and had the form of the deep Hawaiian *umeke* (8, *a*, p. 161 and fig. 142).

415 A description of a special type of small circular container, called *hue po'o* was obtained in Pua Ma'u, Hiva Oa, by Handy.

[766] This container was provided with a lid having a knob handle in which there was a cavity much like the sponge container of a modern humidor. Human flesh was packed into the cavity, and as it decayed the juice dripped down into the bowl below. The fluid was wiped out from time to time with green taro leaves and eaten as a delicacy. The object of the peculiar handle arrangement is said to have been to guard against the theft of the flesh. The container was provided with a long loop handle, probably like those used on coconut bowls, and was carried slung around the neck.

Many circular bowls were provided with fiber handles which were attached to one side and served for the suspension of the utensil when not in use. The simplest of these handles consisted of a loop of sennit passed through a hole below the rim of the bowl and held by a knot on the inside. In another simple form two holes were drilled, the loop being passed through both. The most characteristic handle attachment, which is still used on most well made bowls (Pl. LIX, D) is made as follows:

A hole is bored in the side of the vessel a short distance below the rim, care being taken not to pierce the inner wall. A second hole is then bored downward through the rim, meeting the first at right angles. A loop of cord, braided continuously or spliced at the ends, is then inserted in the lateral hole and fastened by a wooden plug driven downward through the vertical hole. The top of the plug is cut off flush with the rim. Handles of this sort were sometimes decorated by stringing upon the loop large seeds or pieces of carved bone.

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One specimen was described as having a very short loop of cord passed through a large ring of carved bone, which served for suspension. In very large feast bowls the handle was made of a heavy plaited cord of coconut fiber whose ends were attached at two points, four to five inches apart. Such handles were usually encased in a series of bone tubes, made from the small bones of the lower arm or leg. These were similar to the tubes used on the cord handles of coconut shell bowls. The native name of these tubes was not ascertained but according to Handy (32) Dordillon gives a term, *tipoo*, which he defines as "a piece of bone to ornament dishes or drums." It seems probable that this refers to the small carved figures rather than the simple corrugated rings, for the rings were not used on drums so far as could be learned. It is rather interesting that the large feast bowls had handles on the side only, indicating that the handles were used to suspend or drag them, not to carry them.

Wooden handles, cut in one piece with the bowl, are very rare in the circular forms—only three examples were found.

In one of these specimens there are four small, equally spaced projections a short distance below the rim. These projections are carved into peculiar little double figures, and as the rest of the bowl is uncarved the projections are probably intended for ornament, although they could have been used for handles.

Another bowl seen in a native household, had a flat handle about six inches long projecting from one side of the rim. The shape of this handle was identical with that of an ordinary American frying pan, and it seems probable that this development was due to European influence. Still another bowl (Pl. LIX, *E*) now in the Bishop Museum, is egg shaped rather than round.

It is a rather deep well-made bowl, 9 inches wide and 10½ inches long to the base of the handle. The handle springs from one side of the rim and is 3¼ inches long and an inch wide in the center. The outer end is expanded both laterally and vertically, and the tip has a deep vertical notch. The whole handle has very much the shape of the distal end of a human humerus, and may very well have been modeled after one.

It seems probable that covers were employed with some types of round bowl other than the *hue po'o* just described, but if so their use has been discontinued for many years and no examples have been preserved or described.

Some round bowls, especially those of recent manufacture, are provided with low circular bases. A similar feature is found in certain tureen-like oval forms (p. 365). Most of the natives believe that this feature is a recent innovation, copied from the Chinese rice bowls introduced by European traders. On the other hand, a very beautifully carved bowl in the possession of Mme. Mallius, of Ta'aoa, Hiva Oa, shows this feature, although it is obviously an old specimen. It seems probable, therefore, that if the circular base is non-Marquesan it was introduced during the early period of contact.

The transition from round bowls to the oval and rectangular forms appears to be a gradual one, every step being represented by a few examples. No. 1 shown on Plate LX, *A*, is especially interesting in this connection as it has all the features of an ordinary round bowl except that the rim is slightly flattened on

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all four sides. Square utensils appear to have been unknown, those which were not round being oval or oblong. In most of the oblong specimens the sides are more or less convex, the difference between them and the oval forms lying in the degree of flattening at the ends.

Two specimens of a very curious oblong type not observed elsewhere were seen in the Valley of Hanapaoa, Hiva Oa. These utensils were flat bottomed, with shallowly convex sides and ends which met in well marked angles. The whole form bore a remarkable resemblance to the type of food dish commonest among the Haida of the Northwest Coast of North America. The utensils were evidently of recent manufacture and the natives could give no name for the type and were uncertain whether it was ancient.

Oblong trays and dishes appear to have been in rather common use in ancient times, although few specimens have survived. Those seen were provided with low vertical sides and almost flat interior bottoms. The exterior was smoothly rounded. The troughs for beating *popoi* are really very large oblong trays (p. 352).

Several well marked types of oval dishes may be distinguished, of which the long narrow flat ended containers, called *toto*, are the most important. Except for the proportions of the different parts and the inward curve of the sides toward the rim, the form of these utensils is almost identical with that of the underbodies of the large built up canoes. The ends of the vessel are straight, the sides convex, so that the greatest width is in the center. The sides also show a vertical convexity, and the maximum width of the utensil both internally and externally is about midway between the bottom and rim. (See Pl. LX, *B*.)

Most of the *toto* are large. Bowls long enough for a man to lie in are remembered by the older natives. The smallest example seen was 18 inches long, with a maximum central width of 8⅝ inches. Usually no handles were used with this type, but this small specimen was provided with a handle consisting of two loops of sennit passed through holes bored vertically in the corners and tied together above the center.

Toto are said to have been used principally for the transportation of prepared food at the time of feasts, and according to natives their shape was designed to make them easier to carry upon the shoulders. They were carried transversely, resting upon both shoulders and the nape of the neck, the bearer's head being bowed upon his chest.

Small oval *kava* bowls, with nearly parallel sides and rounded or pointed ends appear to have been fairly common and probably constitute a distinct type. Some of these bowls were provided with a suspension loop or handle attached to the center of one side. (See Pl. LX, *A*, 2-3.)

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Oval dishes and trays are now obsolete, but seem formerly to have been rather common. They were of all sizes; examples as much as five feet in length are remembered. Smoothly rounded inside and out, they had no distinct sides. Some specimens showed a distinct flat rim. In a large specimen of this type in the Bishop Museum one end of the rim bears a short upward projection cut into two levels, like steps, but as no examples of this were seen in the group its purpose was not ascertained. (See Pl. LX, *C*.)

Stewart (59, pp. 331-332) speaks of a large trough "rudely sculptured at one end into a head gaping hideously, as if to devour all who approach," which he saw in a *me'ae* of Nuka Hiva. At the time of his visit it contained a decaying human sacrifice. Very large oval bowls with tight fitting covers are also mentioned by early visitors, but no examples appear to have survived.

Small oval bowls having at one end a projecting neck terminating in a knob, and at the other a flat tipped projecting tail flush with the rim, appear to have been rather common in ancient times. In one specimen of this type (Pl. LXI, *B*, 1) which was found in a burial cave and is probably pre-European, the knob is carved into a fine tiki head, directed forward and slightly upward, and the lower side of the neck is encircled by a row of small perforations which were probably intended for the attachment of hair or feather ornaments. In another specimen (No. 2 in the same illustration), also old, the outer end of the knob is pointed and its upper surface is carved into a legless tiki whose face is nearly horizontal. This specimen has on either side a short distance below the rim, a horizontal flange, the whole form being obviously a modification of a bird effigy. Two holes for the attachment of cords are drilled near the tips of the knob and of the tail. The relation between the bowls of this type and the bodies of the boxes (p. 359) is evident, and it is difficult to determine to which class some specimens belong.

The collections of the American Museum of Natural History, New York City, contain an elaborately carved bowl having at either end a flat projecting handle. A similar specimen with the handles carved into grotesque heads is figured by Christian (10, p. 148). Both specimens are obviously recent work, probably made for sale. There is no reason to suppose, however, that they were copied from any European form, a point of importance in our consideration of the next type.

Marquesan utensils having an oval body, a low round base placed centrally, and a projecting knob handle at either end, are quite common in collections (Pl. LXI, *A*). They are frequently provided with a domed cover having upon its center a knob handle, and are always elaborately carved. The resemblance of many of these utensils to European soup tureens is striking, and old

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415 177 European residents of the group and many natives believe that they were copied from them. Other natives declare that the form is ancient. In view of the containers mentioned in the preceding paragraph it seems most probable that this type has been developed from an aboriginal one by the addition of a base and that the obvious resemblance of the resulting utensil to a soup tureen has given rise to the belief that the European utensil was copied entire. The question of the occurrence or non-occurrence of a base in primitive Marquesan utensils is of considerable ethnological interest, but the native evidence is conflicting and very few really old utensils have been preserved. In view of the practical absence of this feature elsewhere in Polynesia it seems safest to ascribe it to European influence.

415 Legged containers appear to be entirely absent in the Marquesas, the nearest approach being a low transverse flange carved near either end of the bottom. This feature was observed in only one specimen, and there is good reason to believe that it was not aboriginal. In view of the importance of utensils with legs in the Society Islands and their occasional occurrence in Hawaii, their absence in the Marquesas is rather curious.

Two bowls of unusual form are shown on Plate LXI, *C*. No. 1 seems to be an imitation of a long cupped leaf, the short upturned handle representing the stem. In both specimens there is a deep channel at the smaller end evidently intended to direct the flow of the fluid in pouring. In No. 1 this channel ends in a well marked lip. The interior of No. 2 is coated with *kava* enamel and it is probable that both were used as *kava* bowls.

An end channel similar to that in No. 2 is a common feature of the large four-legged Tahitian bowls, while bowls with lips were occasionally made by the Maori. Elsewhere in Polynesia these features appear to be rare or lacking.

COMPARISON OF CONTAINERS

415 171 A comparison of Polynesian containers could not fail to throw a great deal of light on the relations of the different groups, but anything like a satisfactory study is impossible at present. Regions in which the containers are poorly made or undecorated are often entirely unrepresented in Museums, while many others are represented by two or three specimens at most. Under the circumstances it is only possible to point out a few obvious similarities and differences. Long oval boxes with covers were numerous in the Marquesas and New Zealand, but appear to have been unknown in Hawaii and Western Polynesia. Round boxes with tight fitting covers are found throughout Western Polynesia and in Hawaii, but are lacking in the Marquesas and New Zealand. They appear to have been rare in Hawaii, and it seems safe to assign the long

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box to the marginal, and the round box to the western culture. Vessels with legs are common in Western Polynesia and in the Society Islands, but are rare in Hawaii. They are absent in the Marquesas, and the only utensils which approach this form in New Zealand are certain large gourds used for potting birds which, according to Tregear (82, p. 98), were fitted with three or four legs to make them stand upright. It is probable, therefore, that the use of legs cut in one piece with the utensil was a feature of the western culture, their absence a feature of the eastern.

A comparison of Marquesan and Micronesian containers yields some interesting results. The Micronesian containers are uniformly flat bottomed and many are provided with bases. The Marquesan containers are round bottomed and the aboriginal use of a base is questionable. The bases of modern utensils appear identical with those used in the Pelew group. (Kubary, 76, Plates 23-7.) Bird shaped containers similar to those of the Marquesas were used in Pelew and the Caroline Islands. (See Finsch, 73, p 321, and Wilson, 83, p. 102.) These bird forms are not found in any other part of Polynesia or Micronesia.

Melanesian containers have never been studied or described as a whole, but it seems certain that the long oval box, which is a feature of eastern Polynesian culture, does not occur in this region. Legged utensils on the other hand are rather common, being most numerous in the Solomon Islands and in Fiji. Bases similar to those of the Pelew and Marquesas Islands seem to have been rather common in the Solomon Islands.

DECORATION OF CONTAINERS

Marquesan containers were decorated by several methods of which carving was the most important. The handles were decorated with seeds and bone tubes, and feathers or locks of hair seem to have been attached to the bodies of some of the containers. The lids of some bowls were covered with an incrustation of red or black seeds imbedded in breadfruit gum. Single red seeds, applied here and there, were used to heighten the effect of the carving, especially when the container was made of the dark colored *mio* wood. These seeds were either wedged in deep grooves of the carving or partly imbedded in the wood. This imbedding of seeds is an approach to inlaying, but it is significant that in spite of the strong aesthetic sense of the Marquesans and their extensive use of bone and mother of pearl in personal ornaments, they appear never to have inlaid wood with these materials.

The elaborate carved decoration of many Marquesan containers made them much sought after by collectors, and the demand for objects of this sort has led to a persistence of the art, although in a rather decadent form. In pre-

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In pre-
415 European times the carving was done with sharks' teeth, rats' teeth, or shells, but
531 for nearly a century these implements have been replaced by implements of iron.
322 Practically all the tools now used by carvers are home-made and are crude, but effective. They consist of small chisels, made from large nails ground to a straight edge; curved chisels, also made from nails, and small gouges, which are usually made from umbrella ribs. Knives are apparently never used for carving.

Containers are always completely shaped and polished as if for use before carving, a practise which increases the difficulties of the artist as it makes it impossible to conceal any slips of the chisel. The bowl to be carved is soaked in a stream for some time to soften the wood, and when not being worked on is usually kept in water. Only beginners draw the designs upon the utensil before carving; the skilled workman carves entirely free hand and arranges the spacing of even the most intricate designs entirely by eye. The chisel, usually fixed in a rough wooden handle, is held with the bit below the hand, and the carver appears to work with equal facility either toward or away from the body. The incision is first marked out by pressing the chisel into the wood vertically, and is then made by pushing the tool along horizontally, with one corner of the bit at the bottom of the original vertical cut and the edge, sloping upward to the surface of the bowl at a variable angle. A long triangular sliver is thus removed; any irregularities in the cutting are dressed down with small chisels. In a very large proportion of the carved specimens all the incisions have this triangular form, but when wide spaces are to be cut away they are outlined by two cuts of the sort just described, the wood between is removed, and the bottom of the space dressed flat or left with a low central ridge. Curved chisels are used to dress the vertical sides of incisions in curved designs, while the gouges are used principally for small details or shallow designs which are incised rather than carved.

Modern carvers have a strong tendency to enlarge and simplify the details of the designs and broaden the incisions in order to increase the speed of production.

415 Carved decoration appears to have been most commonly used upon round
531 bowls, next in frequency being the boxes and the tureen-like covered dishes. At least some of the other forms were probably carved in pre-European times but no carved *toto* or oval bowls, with the exception of the bird effigies, are known. Bird effigies and some boxes were carved only upon the projecting knob, and a few bowls and dishes were decorated with a carved band below the rim, but as a rule the carving covered the entire outside of the utensil. In applying the designs the surface was rarely, if ever, treated as a whole, being broken up into a number of sections which were treated as separate units. In the actual process of carving the outlining of these sections upon the bowl was the first step, and the filling designs were applied afterward. A symmetrical arrangement of the sections appears to have always been intended, and there is usually more or less agreement between the filling designs of corresponding sections. In decorating a circular bowl the bottom was usually treated as a single unit, although it was sometimes divided into two or more parts. The sides were divided either into horizontal zones or vertical sections, and the boundaries marked either by plain

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grooves or by narrow bands of design. On account of the shape of the vessel the vertical sections were wider at the top than at the bottom. Some specimens show both horizontal and vertical divisions. On boxes and other oval containers the arrangement of the sections appears to have been variable.

CLASSIFICATION OF DESIGNS

The material available for a study of container designs is limited. Only one of the carved containers studied appears to belong to other than the later period of European contact, and the bulk of the specimens in museums are unquestionably commercial products. Most of the modern work indicates a sacrifice of quality to quantity of production, which shows itself in slipshod work, simplification of the designs used, and an increasing tendency toward angularity. Each of the modern carvers has a tendency to ignore all but a few motifs, which he has learned to reproduce rapidly and accurately. As a result of this the work of a given carver, or that of his pupils, can at once be distinguished in a mixed collection. The style of many of the older specimens seems to indicate that a similar individual specialization in designs existed at least thirty or forty years ago, but it is impossible to say definitely that such was the case. It is probable that distinct local or individual schools of decoration existed in pre-European times; but if so, their content and differences can not now be established. The modern carvers appear to have borrowed few, if any, European motifs, and the present art is a simplified rather than a mixed one.

The simple division of designs into angular-geometric and curvilinear, used in the study of house post decorations, is unsatisfactory for containers. The best classification appears to be as follows: (1) band decorations, (2) angular-geometric designs used to fill sections, (3) design elements, (4) motifs, (5) representations of natural objects.

(1) BAND DECORATIONS

Band decorations consist of various arrangements of dots, straight lines and angles, with one arrangement of spirals, employed upon the spaces separating sections of design, and to some extent upon design elements. Bands appear rarely, if ever, to have been used to fill sections. Band designs are shown on Plate LXII as follows:

A. Straight parallel lines.
B. Straight rows of dots, used either singly or in parallel.
C. Parallel diagonal lines.
D. Herringbone patterns.
E. Cross-hatching.
F. Zigzag parallel lines, either longitudinal or transverse.
G and *H*. Alternate interlocking triangles, solid or filled with V's or with lines parallel to one side.

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J. Alternate interlocking triangles separated by parallel diagonal lines.
K. Two rows of opposed triangles, the spaces between being filled with concentric diamonds or broken scrolls.
L. Bands of oblongs placed transversely at intervals equal to their width.
M. A combination of *L* with a row of inverted triangles, the apex of each triangle resting against the end of an oblong.
N. A combination of *L* with a zigzag line, apparently a modification of *M*.
O. Rows of pointed half ovals, each oval containing a spiral.

(2) ANGULAR-GEOMETRIC DESIGNS USED TO FILL SECTIONS

Angular-geometric designs were rarely used to fill sections. The collection included only two specimens decorated in this way. One of these is a large feast bowl from Pua Ma'u, Hiva Oa, decorated entirely with simple angular-geometric designs, most of which are like those used upon house posts. The other is a crudely carved box, locality unknown, which bears very few designs of ordinary container type. The designs used are shown on Plate XLII, *P*.

1. Four triangles meeting at the apex, their interiors being filled with V's.
2. Groups of diamonds filled with concentric diamonds or angular scrolls.

(3) DESIGN ELEMENTS

The designs here described (Pl. LXIII, *A*), although sometimes enlarged to fill entire sections, were usually incorporated into complex motifs or used to fill in the parts of a section not covered by the main motif.

A. Spirals are the commonest element of Marquesan bowl design. Both single and double spirals are employed. A few examples are true spirals of nearly circular outline. Some are triangular but the greatest number are rectangular. The double spirals appear in several forms with the turns both in the same and opposite directions. (Drawings 1-5.)

B. Circles appear to have been normally used only to outline the section of decoration covering the bottom of round bowls. Only one example of a series of concentric circle used to fill a section was found. (Drawing 6.)

C. Ovals and rectangles grade imperceptibly into each other and it is often difficult to distinguish one from the other. Both were employed either as fill, or in enlarged form, to decorate entire sections. The interiors of these figures were usually filled with concentric ovals or rectangles. (Drawings 7 and 9.)

D. Pointed ovals were ordinarily used only as parts of more complex motifs and were less common than the ovals of class *7*. They were filled either with concentric ovals or with herringbone patterns. (Drawing 8.)

E. Segments of ovals were extensively employed as fill and as portions of more elaborate motifs. They were usually filled with either concentric half or quarter ovals or with hooks. (Drawings 10-12.)

F. Combs, half ovals or half rectangles whose interiors were filled with short parallel lines perpendicular to the long axis of the figure, were employed principally as details of larger motifs. (Drawings 13 and 14.)

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G. Pokaa is the name given a small circle, oval or rectangle broken at some point in its circumference. In the container designs *pokaa* figures grade imperceptibly into small circles bisected by a groove or bar, and from these into various forms of double spiral and scroll. The term is used here to include all figures of this class not certainly spirals or scrolls although its native application is probably more limited. The extent of the variation can be seen from the accompanying plate taken from those used upon commercial clubs. The *pokaa* was used to a minor degree upon bowls, and is fairly common in modern carving, but appears to have been primarily a tattooing design. It was also used on ancient war clubs. Arrangements of two *pokaa* placed back to back and joined by a bar do not appear to have been used in tattooing, but are found in the carving. (See drawings 15 to 20.)

H. The natives designate a series of concentric circles, ovals or rectangles broken by a bar or groove extending from the center to beyond the rim as *cipuoto*. These figures grade into *pokaa* and the two motifs are closely related. They are of only minor importance upon bowls, but appear in tattooing, upon house posts, and as petroglyphs. From their use in rock carvings it seems probable that these designs have a special significance, being possibly a conventionalized representation of a vagina and phallus. (See drawings 21-27.)

I. The use of hooks of characteristic form does much to give Marquesan art its distinctive quality. These hooks are of two types: One hook has a short vertical and a long horizontal arm meeting at right angles. The sides of the vertical arm are parallel; the lower side of the horizontal arm is straight and the upper irregularly convex. The end of the horizontal end is pointed. (See drawing 28.) The second hook contains either two or three sections which meet approximately at right angles, the sides being parallel throughout and the ends straight or rounded. (See drawing 29.) The pointed hooks are rare in container decoration, but are common in tattooing. The other type of hook is constantly used in container design, ranking even before the spiral in frequency. It is used principally to fill segments of ovals or rectangles, and the arrangement is more or less stereotyped. In filling a half oval a series of three section hooks are placed with their bases resting upon the straight edge of the figure and their points at alternate ends. The innermost hooks are usually of two sections only. (See drawing 30.) In filling a quarter oval two sections are employed, the bases of alternate hooks resting against first one and then the other of the straight sides of the segment. (See drawing 31.) The hooks are always incised and the raised surface left between the cuts forms a continuous scroll which will be referred to as a hook scroll.

J. Crosses. Both plain (drawing 32) and staggered (drawing 33) crosses were employed, but always in connection with other designs which filled the spaces between their arms and the edges of the section.

K. Triangles rarely appear outside of the band decorations. They are used principally upon the bottoms of bowls and are filled either with angular spirals or with concentric triangles (drawing 34).

(4) MOTIFS

Motifs include the various standardiation combinations of design elements other than those which appear to be representations of natural objects. These are illustrated in Plate LXIII, *B* as follows:

1. Crosses, either plain or staggered, with arms continued into hook scrolls which fill the four quarters of the section.

2. *Kaake*, broad, straight-ended elbow figures with ends and bodies decorated with designs. (The *kaake* motif is common in tattooing, but rare in container decoration.)

3. *Mata.* The simplest form of the *mata* consists of two half ovals (convex side downward) each of which is filled with hooks or concentric half ovals, below which centrally there is some variant of the *pokaa*. The space on either side of the *pokaa*, below the half ovals, is usually filled with small designs not connected with these main elements. The whole arrangement apparently represents a highly conventionalized face in which the half ovals serve as eyes and the *pokaa* as nose. Some forms of double spiral seem to be related to the *mata* motif. *Mata* are rather rare in container decoration, but are common in tattooing.

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

(5) REPRESENTATIONS OF NATURAL OBJECTS

415 532 The Marquesans appear rarely to have carved representations of natural objects other than human beings upon their containers, although a statement of Langsdorff that they carved upon their bowls "little figures of human faces, of fish and of birds" (38, p. 172) may indicate that this was done in former times. The representations of natural objects upon the containers examined may all be assigned to some one of three classes: representations of human beings, representations of animals or insects, floral designs. With the exception of the human figures carved upon one box, all such representations are highly conventionalized and are linked by intermediate forms to various purely decorative designs.

(6) REPRESENTATIONS OF HUMAN BEINGS

The decorations on Plate LXIV, *A* may be divided into three classes: more or less naturalistic figures, which occur only upon the specimen mentioned in the preceding paragraph; angular-geometric figures; and figures carved according to the tiki convention.

The naturalistic figures (drawings No. 1) are crudely executed, resembling the drawings made by a child. The persons are represented with the legs apart and the arms akimbo. The body and limbs are shown as simple lines or bands. In one example the toes are indicated. The heads are disproportionately large and the features, when shown, are grotesque. Curiously enough the faces have little or no resemblance to those of figures of the tiki type.

Angular-geometric representations of human beings appear to have been employed exclusively in the form of narrow bands (drawing No. 2) The representations consist of an inverted triangle, representing the head, below which there is a cross line for the shoulders, with three vertical lines, representing the body and arms. No other features are indicated. Representations of this sort sometimes occur in the same bands with decorations *L*, *M* and *N*, shown on Plate LXII, and it is possible that those band decorations originated from representations of human figures.

Human figures carved in the round or in relief appear to have been almost never used upon containers; but flat figures, which stand to the true tikis in the relation of a line drawing to a bas-relief or statue, were extensively employed. They evince a strong tendency to modify the body by substituting decorative elements for its various parts, or to eliminate the body altogether. The convention used for depicting the features was essentially the same as that of the true tikis, and a suggestion of the relief form is usually retained in the modeling of the eyes within and above the rings. (Drawings No. 3.)

The eyes are shown by two rings joined at the inner ends and continued at the outer ends into horizontal bars which terminate in double spirals or scrolls, representing the ear. The

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

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bridge of the nose is usually indicated by a straight line, and the nostrils by semi-circles or semi-ovals. The mouth is shown as a simple oblong or narrow oval with a longitudinal central ridge, and in a few designs the teeth are indicated by short transverse grooves. There is usually a horizontal ridge across the eye ball, but in some figures the eye ball is smoothly rounded and in one specimen there is a distinct central disk, like a pupil. The most interesting feature in connection with the use of tiki figures is the gradual elimination of details. Not only is there a strong tendency to omit the body, but the features of the face are discarded one by one. The first to be lost is the mouth, followed, with equal frequency by the nose or ears. In a few carvings only the linked ovals of the eyes remain, and in some designs a single unmistakable tiki eye, with an attached ear, is used as a separate element.

(7) REPRESENTATIONS OF ANIMALS OR INSECTS

Three motifs appear to be highly conventionalized representations of some animal or insect. (Pl. LXIV, *B*.) Two of these motifs each occur upon one specimen only, while the third, with many modifications and variations, plays an important part in bowl design.

The simpler of the rare motifs (drawing No. 1), found in only one specimen, consists of a broad straight groove ending in a circle or semi-circle and having along either edge a fringe of diagonal lines. The whole form suggests a centipede, but it can not even be said with certainty that a representation of a natural object is intended.

A second rare motif, also found upon one specimen only, has a long narrow body in the form of a pointed oval, at one extremity of which are placed forelegs and a head and at the other hind legs with a suggestion of a tail.

The body is decorated with a single longitudinal groove and has on either side a number of short transverse grooves, apparently representing a spine and ribs (drawing No. 2). Each pair of legs, with the head or tail, is treated practically as a separate unit, the form suggesting the crosses shown in Plate LXIII, *B*, 1. The space along either side of the body is filled in the original with unassociated designs carved at a lower level. The whole treatment is so conventional that identification is difficult, but it seems probable that a lizard is intended.

The third motif is comparatively common in the modern commercial work from Fatu Hiva and shows a more or less standard form, with many examples which have been modified in various ways. The standard figure and various modifications are shown on Plate LXIV, *B*, 3.

The standard figure consists of a long oval with which are connected three pairs of spirals, two being attached at either end and the third pair somewhere along the sides. There is usually a suggestion of a head at one or both ends.

A more or less standardized variation, which may have been originally a separate motif (Pl. LXIV, *B*, 4) has a shorter and broader oval body, with or without a head, from the upper end of which spring two broad curved bands, while to the lower end are connected two spirals or separate scrolls. This form grades imperceptibly into purely decorative designs with no suggestion of representation.

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

FLORAL DESIGNS

415 532 Representations of plant forms are quite rare, and true floral designs are represented by only three examples. In two of these, which appear upon the bottoms of two bowls so closely similar in other details that they are probably the work of the same artist, the center of the flower is represented by two concentric circles, around which the petals, represented by small ovals, are placed radially. The interior of some of the petals is decorated with herringbone design. (See fig. 9, *a*.) Upon a third specimen, groups of small pointed ovals, apparently representing bunches of leaves, are used to fill in the details of one of the larger designs. (See fig. 9, *b*.)

a *b*

FIGURE 9.—Drawings of Marquesan floral designs.

415 531 From the specimens examined it seems that angular-geometric designs played a very minor part upon most containers, but they appear on a few specimens to the practical exclusion of curvilinear designs. Specimens showing anything like an equal frequency of occurrence of the two types of design appear to be entirely lacking. At the same time there is a strong tendency to give an angular form to designs which are basicly curvilinear. This tendency is most pronounced in the new specimens. The commonest of all design elements appear to have been the spiral and the hook scroll, segments of concentric ovals or rectangles ranking next in importance. Tiki figures, representations of animals or insects and combinations of crosses and hook scrolls are the most important motifs, as distinguished from design elements. *Mata* and *keake* are rare, while *pokaa* and *cipuoto* are not common.

COMPARISON OF POLYNESIAN CONTAINER DESIGNS

415 531 171 Containers decorated with carved designs appear to have been unknown in western Polynesia and Hawaii. In other regions, except Easter Island and Chatham Islands, they were used to a greater or less extent, but reached their highest

[9] The relation of Marquesan designs as a whole to those of other parts of Polynesia have been discussed fully in a paper by Ruth Gruner (71). Only the most important points will be enumerated here.

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

development in the Marquesas. A superficial study of the designs employed in the regions of their occurrence shows the following:

In southeastern Polynesia, to judge from the few examples available for study, we have a division of the surface to be decorated into a number of small sections or bands which are filled with small angular geometric motifs. These motifs are usually applied in bands, and are not as a rule combined to form larger designs. The only curvilinear form is the concentric circle.

In the Marquesas we have a division of the surface to be decorated into sections of relatively large size which are often separated by bands of simple design. These sections are treated as units, being filled with large designs formed by the combination of several design elements. Both curvilinear and angular-geometric designs are employed, but curvilinear designs are clearly dominant in container decoration. There is a tendency to give angularity to basicly curvilinear forms, such as the spiral, but there is an equally strong tendency to round the angles of basicly angular forms, such as the oblong.

In northern New Zealand the surface to be decorated is either treated as a whole, or divided into a very few large sections by bands of narrow design. Only curvilinear designs are employed, the dominant motif being the spiral. An important feature of the technique is the use of a beaded interline.

If we compare the southeastern Polynesian carvings with those on western Polynesian weapons, the most elaborately carved objects from that region, we are at once struck by a basic similarity in design and execution. There is the same division of the surface into many bands or sections which are filled with small angular-geometric motifs. The southeastern Polynesian examples show an additional motif, the concentric circle, and show superior workmanship, but the carvings from both regions resemble each other much more closely than they do those of either the Marquesans or Maoris.

The Marquesan and Maori carvings have little superficial resemblance, but they possess two features in common which are foreign to the regions just compared; a predominance of curvilinear designs, and an extensive use of the spiral. The toothed line, important in New Zealand, occurs in the Marquesas but is rare there. The practise of dividing the surface to be decorated into sections, constant in the Marquesas, is rare among the northern Maori, but angular-geometric designs seem to have been used in carving in some parts of New Zealand.

It appears that there existed originally in marginal Polynesia, exclusive of Hawaii, a predominantly curvilinear art which treated surfaces as a whole or in large sections. The original western Polynesian art was angular-geometric, with a division of the surfaces treated into many small sections. In the Cook Islands, Austral Islands and Society Islands, the original marginal art was almost de-

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

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stroyed by an invasion of western culture. The strong evidences of such an invasion have already been pointed out in the case of other elements of material culture. On the side of pure decoration the original art modified that of the invaders to a very small degree. Northern New Zealand, because of its location, was practically unaffected by the western Polynesian art. The Marquesas, on the other hand, received a moderately strong influence resulting either in the introduction of sectional treatment of surfaces and angular-geometric designs on in the strengthening of these features if they were present in the original complex.

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

285 Edge Partington (20, p. 46) figures a closely woven basket of coconut leaves of still a different type. It is oval in outline, with a flat bottom, vertical sides and a flat recurved top, making the opening considerably smaller in diameter than the body of the basket. No baskets of this sort are now in use and the form seems to have been forgotten.

[415] In the collection of the Peabody Museum at Cambridge there are two rather curious sacks from the Marquesas..

The material is split pandanus similar to that employed in mat weaving. The sacks are almost identical in size and construction and are rectangular, 14½ inches long and 11 inches deep. The form is that of an envelope with a triangular flap. The body of the sack is of double thickness, the outside layer being made of strips ⅛ inch wide except for the last 3 inches below the top. The sack above this point, the flap, and the inner layer, are woven from much finer strips produced by splitting each of the ¼ inch strips in three. The technique is a simple checkerwork. A loop of twisted coconut fiber is attached to the center of the lip of the sack and passes up through a hole in the flap, protruding for 2 to 3 inches when the sack is closed. There is no information as to the use of these objects.

Jardin (33, p. 36) says that the natives wove coarse baskets from the flexible shoots of the *tutu* (Ceanothus asiatious), but gives no data to their form or the technique employed.

FANS

293 Marquesan fans were of two sorts, ordinary fans, which are still manufactured and used, and chiefs' fans, which were carried by persons of importance and were intended for show rather than use. The chiefs' fans are now obsolete, and no examples have been preserved in the group. They are fairly numerous in collections, however, and the type may be accurately described.

The coconut fans have a broad straight outer end and sides which are nearly parallel at the tip and curve inward smoothly at the base. All the specimens seen were more or less asymmetrical (Pl. LXVI, *F*), but this did not appear to be intentional. They are made as follows:

Young coconut leaflets are folded so that the midrib lies along one edge of the woven strip. The weaving is begun at the outer end, a flat band, twilled over two and under two and as long as the width of the proposed fan, being woven first. The twill in this band is longitudinal, and the whole is rarely more than seven elements wide. The direction of the twill is then changed to vertical, and the fan woven down to the upper end of the handle. To form the handle the two leaflets which are central at that point are crossed and carried down vertically, each succeeding pair being similarly detached from the weaving, crossed and braided in with those already detached until all have been included. The ends of these leaflets, which extend some distance below the fan, are then packed closely together, wrapped with bark string, and cut off squarely at the tips, the whole forming the handle.

The following description of chiefs' fans (Pl. LXVII, *A*, *B*) is based upon an examination of specimens in the possession of M. George La Garde of Papeete, and in various American museums. The weaving appears to have been uniform; the technique being as follows:

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

LOCAL DIFFERENCES IN MATERIAL CULTURE

Although the material culture of the Marquesas seems to have been nearly uniform, a few local differences are known to have existed. Most of these differences seem to have consisted in a greater or less stressing of features common to the whole culture rather than in a clear-cut absence or presence of traits. In view of the trade and intercourse which are known to have existed in the group even in prehistoric times the survival of such differences seems to indicate that at some former time the local distinctions were still more pronounced. It is difficult at the present time to establish the extent of the local variation. The culture as a whole has broken down under European contact, and since the intertribal wars have ceased there has been a considerable movement of the native population. Ua Huka, in particular, is at present inhabited chiefly by persons born in other parts of the group.

For convenience of reference the local differences in materials and practice may be summarized as follows:

HOUSES

	NUKU HIVA	HIVA OA	FATU HIVA
House Platforms	Large and well built. Wide, some square. Much cut stone. Ornamental masonry.	Small and less well built. Long and narrow. Cut stone rare. No ornamental masonry.	Small and low. Long and narrow. No cut stone. No ornamental masonry.
Pit for tapa objects	Common	Absent	Absent
Ridge Pole	Round	Round or many sided	(?)
Front Stringer	Round or square	Square or L shaped	Square or L shaped
Pitch of rear roof	Very steep	Less steep	(?)
Ornamental lashings	Extensively used	On roof only	(?)
Carved house posts	Rare or absent	Normal	Common
Ornamental stone images	Not used	Uncommon	Not used
Stone back rests	Rare or absent	Common	
Unique features of houses	Bamboo partitions	One grass house	
Opu type of popoi pounder	Not used	Common	Rare
Salt pounder	Rare	Not used	Not used
Shape of popoi trough	Short and broad	Long and narrow	Long and narrow

DRESS AND ORNAMENT

	NUKU HIVA	HIVA OA	FATU HIVA
Tapa	Combined ute and breadfruit used (rare).	Combined ute and breadfruit not used.	(?)
Tattooing	Designs predominantly angular, small naturalistic figures.	Designs predominantly curvilinear, no naturalistic figures.	Same as Hiva Oa
Tattooing Implements	Comb sometimes fixed permanently in handle.	Comb not fixed in handle.	Comb not fixed in handle
Tauvaha	Common	Less common	(?)
Incrusted head ornament	Present	Not recorded	Not recorded
Puekaha	Not made	Common	Common

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

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Comparative Table Material Culture—Continued

Containers

	Marquesas	New Zealand	Hawaii	Society Islands	Samoa	Tonga
Boxes	Oval, often bird form, tight cover	Oval, tight cover	Round, tight cover	Present, form unknown	Round, tight cover	No data
Bowls with legs	Not used	Not used	Present but rare	Oval form common	Common	Common

Weapons

	Marquesas	New Zealand	Hawaii	Society Islands	Samoa	Tonga
Clubs	Paddle club and un-, no bludgeon or throwing club	Characteristic local forms	Short bludgeon, stone headed club (rare); throwing club	Fi nigeon, modified paddle club, sickle club, no throwing club	Many types, mostly of Fijian origin, throwing club important	Many types, mostly of Fijian origin, throwing club important
Shark tooth weapons	Knives, no true weapons	Knives, no true weapons	Knives, no true weapons	Many pronged weapon and sickle	Not used	Not used
Bow	Toy and for fishing	Used traditionally as weapon	Toy and for rat hunting	Used in chief's game	Toy and fishing	Important weapon
Sling	Important	Occasionally used as weapon, also toy	Important	Important	Common	Little used
Sling stone	Double conical	Not shaped	Double conical	Not shaped	No data	No data
Throwing cord	In games only	Stick with cord	Not used	Not used	Not used	Not used
Spear with head cut to break off in wound	Present	Several types	Not used	Not used	Not used	Not used
Chiefs' staves	Important, blade flat, upper end enclosed in woven sleeve, top decorated with hair	Important, blade flat, upper end enclosed in woven sleeve, top carved	Not used	Not used	Not used	Not used
Armor	Not used	Several thicknesses of mats	Thick mats and wicker helmets	Breast plates of heavy fiber, helmets	One-piece suit like Gilbert Islands, very rare	Not used

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HOUSE CONSTRUCTION AND FURNISHINGS: *A*, BACK REST, SIDE VIEW; *B*, BACK REST, REAR VIEW; *C*, OLD HOUSE AT ATUONA, HIVA OA; *D*, FURNISHINGS AND CONSTRUCTION OF END WALL; *E*, CLOSE VIEW OF BED; *F*, ORNAMENTAL LASHINGS OF REAR ROOF.

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

[end plate 1]

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Peabody P. Bishop Museum

A

B

C

D

E

STONE ARTIFACTS AND OTTENSILS: *A*, TOP VIEW; *B*, SIDE VIEW OF CARVED SIX-SIDED CONCAVITY MORTAR, PHILADELPHIA; *C*, PIPE; *D*, STEPPED PIPE, SIDE AND FRONT VIEWS; *E*, FRAGMENT OF DECORATED BOWL.

7: Lemoo E-5 (1920-1921) 1923 OX6 Marquesas OX8

[End plate 107]

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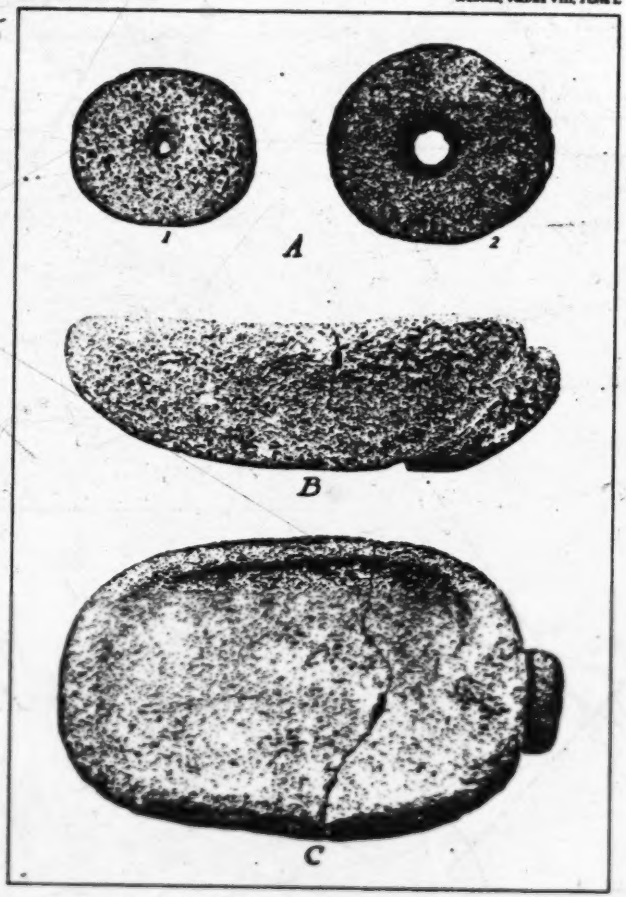

STONE ARTIFACTS AND UTENSILS: *A*, PERFORATED DISCS; *B* AND *C*, SIDE AND TOP VIEWS OF TRAY.

[end plate II]

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

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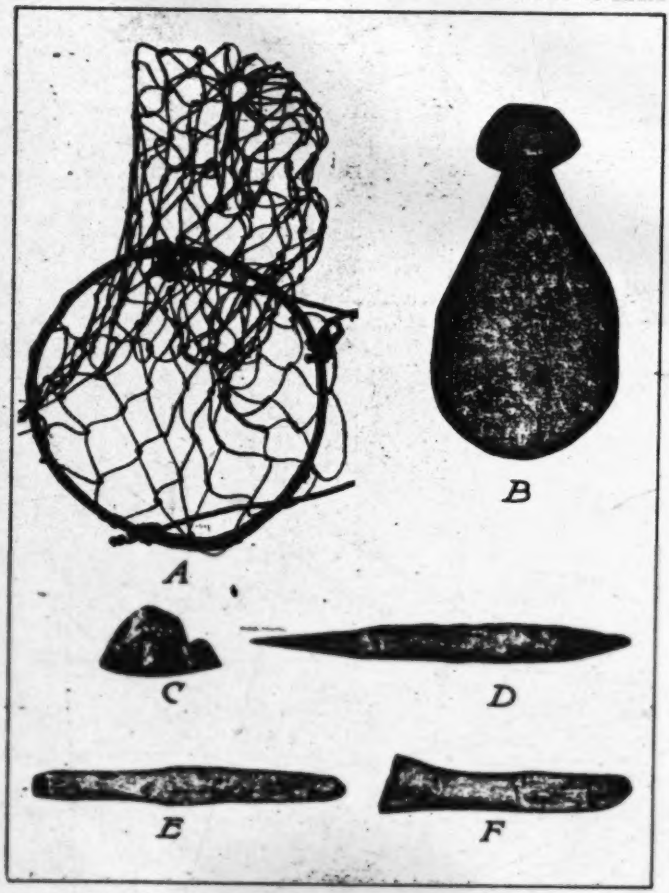

ARTICLES USED IN PREPARING BREADFRUIT: *A*, NET FOR CARRYING FRUIT; *B*, SPLITTER; *C*, PEELER; *D*, STICK FOR PIERCING FRUIT; *E*, WOODEN KNIFE; *F*, BONE KNIFE FOR PEELING COOKED FRUIT.

End plate 15

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

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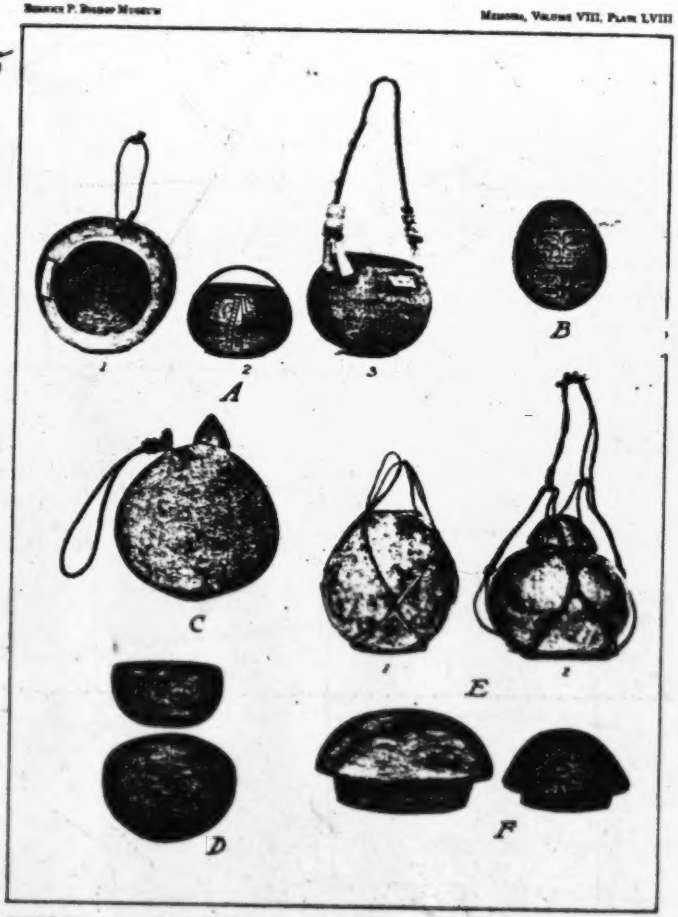

COCONUT SHELL AND GOURD CONTAINERS: *A*, COCONUT BOWLS—(1) WITH LOOP FOR SUSPENSION, (2) WITH HANDLE MADE FROM SHELL, (3) WITH DECORATED CORD HANDLE; *B*, COCONUT BOTTLE FOR OIL; *C*, COCONUT BOTTLE FOR WATER; *D*, CARVED COCONUT CUPS; *E*, GOURD CONTAINERS (NUT); *F*, STOPPERS FOR GOURD CONTAINERS.

[End plate 19]

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

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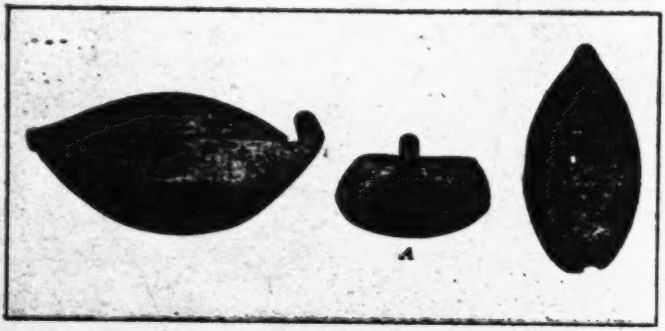

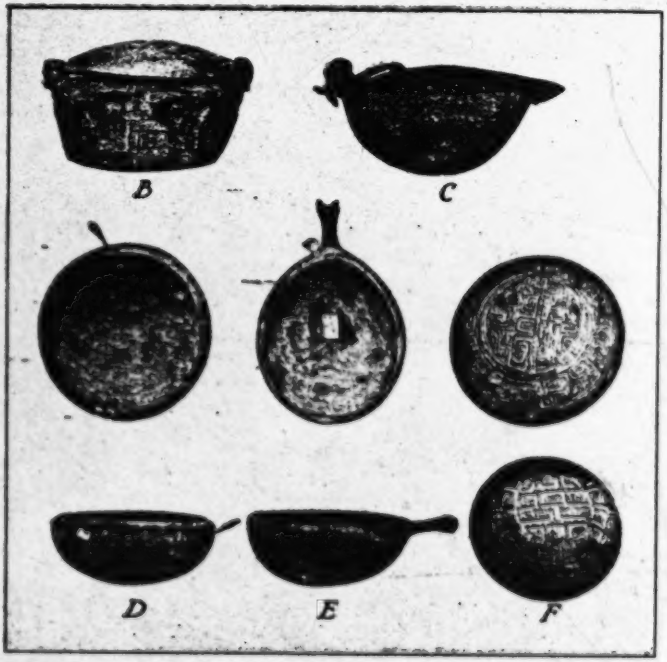

WOODEN CONTAINERS: *A*, LARGE BOX, VIEWS OF SIDE, END AND INSIDE OF LID; *B*, CARVED BOX, UNUSUAL FORM; *C*, SMALL BOX; *D*, BOWL WITH LOOP FOR SUSPENSION, TOP AND SIDE VIEWS; *E*, BOWL WITH HANDLE, TOP AND SIDE VIEWS; *F*, CARVED BOWLS, BOTTOM VIEWS.

[end plate 20]

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

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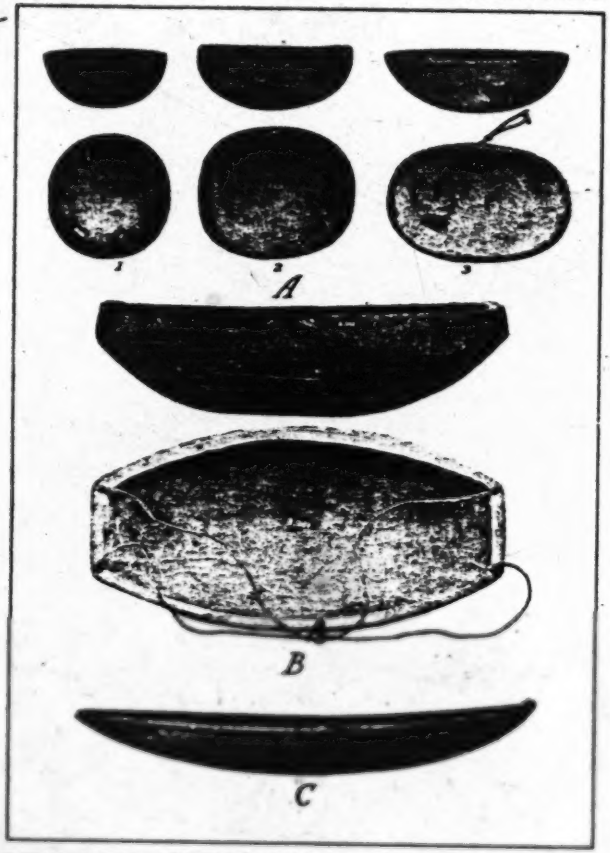

WOODEN BOWLS AND TRAYS: *A*, BOWLS—(1) AND (3) KAVA BOWLS, TOP AND SIDE VIEWS; *B*, TRAY, SIDE AND TOP VIEWS; *C*, LARGE OVAL DISH OR TRAY.

[end plate 21]

7: Linton E-5 (1920-1921) 1921 OX6 Marquesas OX6

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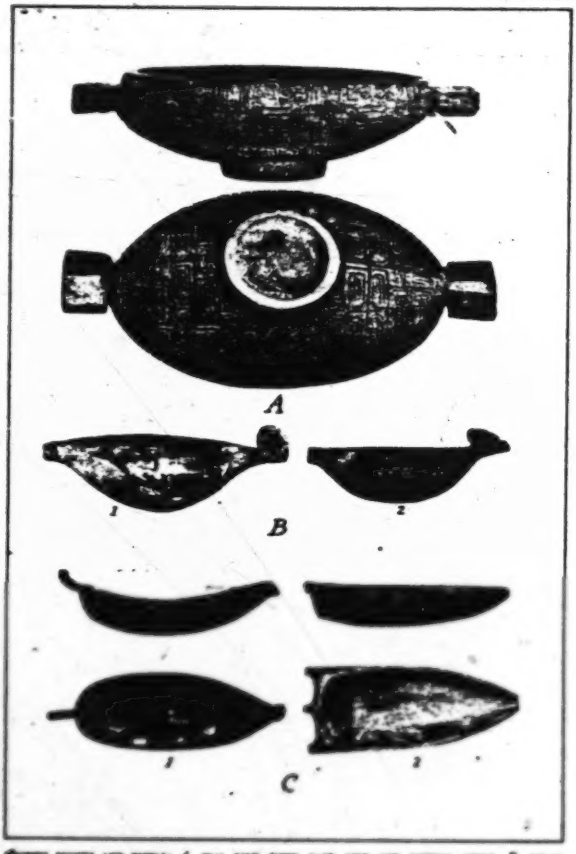

WOODEN BOWLS AND BOWLS: *A*, OVAL DISH WITH SIDE, SIDE AND BOTTOM VIEWS; *B*, SMALL BOWLS; *C*, KAVA BOWLS OF UNUSUAL FORM, SIDE AND TOP VIEWS.

[end plate 23]

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MATS AND BASKETS: *A*, SMALL MAT OF TI LEAVES; *B*, PLAIN PANDANUS MAT; *C*, PANDANUS MAT EMBROIDERED IN RED; *D*, BASKET, ROUND TYPE; *E*, BASKET, HANDLE TYPE; *F*, PAIR OF BASKET WEAVES—TYPE IN USE IN 1920.

End plate 27

T: Linton E-5 (1920-1921) 1923 OSU Marquesas Coll.

9: Greiner E-4 (no date) 1923 OX6 Marquesas OX6

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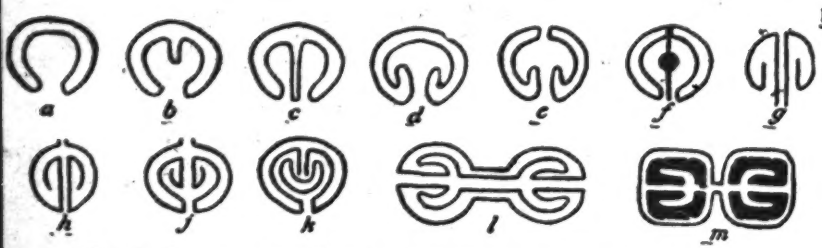

Fig. 1. Drawings showing the development of the *pokaa* design.

The *pokaa* (p. 8) is found in so many variant forms on war clubs as to merit special attention. Fig. 1 shows twelve *pokaa* arranged in order of simplicity to demonstrate a possible line of development; *a* shows the simplest and most typical form. In *b* the same form is shown but with a short tongue extending down from the center of the arch; in *c* the tongue is longer, and in *d* the ends of the *pokaa* are recurved inward and upward and a tongue is lacking; *e* shows the arch broken in the center; *f* has a vertical line and dot between the arms of the figure; *g*, *h* and *j* show steps in the development of a spiral; *k* is a combination of *a* and *b*; *l* represents in reality two figures like that shown in *k*, placed back to back and connected by a straight groove (a marked similarity to the under-arm tattoo motif); and *m* differs from *l* only in having a rectangular outer edge.

A number of angular geometric and curvilinear elements and motifs are used as border patterns and as fill on modern war clubs, but the outstanding designs employed are the tiki faces, the isolated eyes with one or two sets of ears attached, the naturalistic representations of insects, and the variant forms of the *pokaa*.

Designs on Bowls

The Marquesans have extended their highly developed wood-working technique to the decoration of bowls. One fine old specimen (Pl. XIV) shows a predominance of curvilinear designs while another, a large and much weathered feast bowl (Pl. XIII) shows an even stronger predominance of angular geometric housepost designs. The more recently made specimens show coarse, wide lines, giving a heavier effect, and in their carvings angular geometric designs are employed as much as the curvilinear patterns. The bowls carved for commercial purposes at the present time show very open but coarse angular geometric designs. Their decoration appears to have occupied only the time necessary to produce a salable article.

[H45 439]